

SOAP



and Chemical Specialties

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trend to larger package sizes for new heavy duty liquid detergents — not yet distributed nationally — is tested by Lever Brothers Co., New York. "Wisk" in half-gallon cans, by Continental Can Co., New York, is quietly being test marketed in New England states.

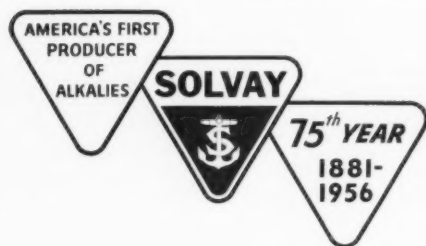




THEY STARTED THE AMERICAN ALKALI INDUSTRY

These men of Solvay . . . 75 years ago!

Marking our 75th Anniversary this year, we take pride in Solvay's pioneer role in the establishment and development of the American Alkali Industry. But, at Solvay we do not think of pioneering as a picture from the past but as a continuing job for today and the years ahead.



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tetrasodium salt

disodium salt

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SOAP

and Chemical Specialties

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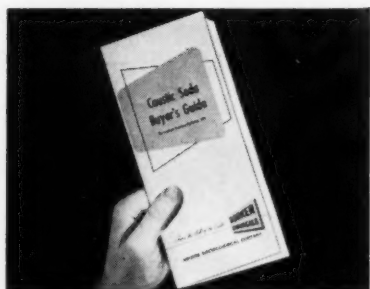
BRIEFS

for buyers of

Caustic Soda

Caustic Potash

Carbonate of Potash



Useful facts on buying caustic soda are at your fingertips in this new pocket-size booklet.

Title: *Caustic Soda Buyer's Guide*.

Contents include a list of reasons *pro* and *con* switching from 50% to 73% liquid caustic.

There's a factual discussion of the comparative economics of both strengths, including a handy nomograph to help you figure which strength is your better buy.

The booklet also contains a nomograph that helps you estimate your liquid caustic requirements for various process solutions.

There's information on solid and flake caustic, too. Two tables show at a glance the dimensions and capacities of the many containers in which you can buy Hooker caustic soda.

Finally, there's a list of important points to consider when you're looking for a caustic soda supplier.

Check the coupon at right for a copy. Or write us if you'd like more than one.

He treats our caustic drums rough. A customer in the Pennsylvania oil fields made one of our salesmen wince, with the following reason

for buying caustic soda from Hooker.

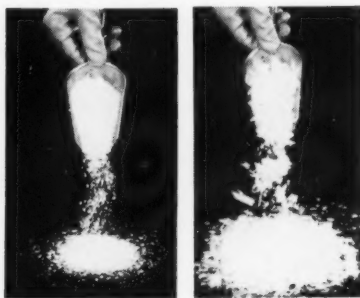
Said he likes our flake caustic soda drums because they make it easy to distribute caustic in the field. He just shoves the drums off the tailgate of his truck, lets them bounce. Says he's been doing it for some time without handling losses.

We certainly don't advise this procedure, but it does provide a dramatic testimonial.

Six lugs grip the lid of every drum of Hooker flake caustic soda—the best way we've found to keep the drum sealed and the caustic dry and pure for your processing or repackaging.

Each drum comes to you full of clean, uniform flakes—regular, fine or crystal—or powdered caustic.

The pictures below demonstrate how dust-free the flakes are... thanks to a tightly-controlled flaking-screening process we've developed.



Two new Hooker chemicals.

You can now buy caustic potash and carbonate of potash from Hooker, under the trademark *Nialk*®.

Nialk Caustic Potash is available in 45% to 52% solutions, and in these

solid forms as 90% and 85% (low chloride) material: solid, flake, granulated, broken, crushed, powdered, and walnut.

You can get *Nialk Carbonate of Potash* in 48% and 52% solutions, and in solid forms as 83.5% to 84% hydrate, and as calcined (less than 1% H₂O).

If you already use these *Nialk* chemicals, we assure you they will be made to the same rigid specifications as always.

If you buy *other* Hooker chemicals, and also use caustic potash or carbonate of potash, you can now get the benefits of a consolidated source of supply.

If you are not a Hooker customer now, we hope these chemicals will give you two more reasons for becoming one.

The nearest Hooker sales office, will gladly answer any questions you have about these and other *Nialk* products.

Check items you'd like to receive:

☐ *Caustic Soda Buyer's Guide*

Technical data on:

- ☐ Caustic Soda, flake and solid
- ☐ Caustic Soda, liquid
- ☐ Caustic Potash
- ☐ Carbonate of Potash

For information on these other Hooker chemicals used in soaps, detergents, cleansers, polishes, and other specialties, check here:

- ☐ Cyclohexanol
- ☐ ortho-Dichlorobenzene
- ☐ para-Dichlorobenzene
- ☐ Sodium Sulfide

Clip and mail to us with your name, title, company address. When requesting samples, please use business letterhead to help speed delivery.



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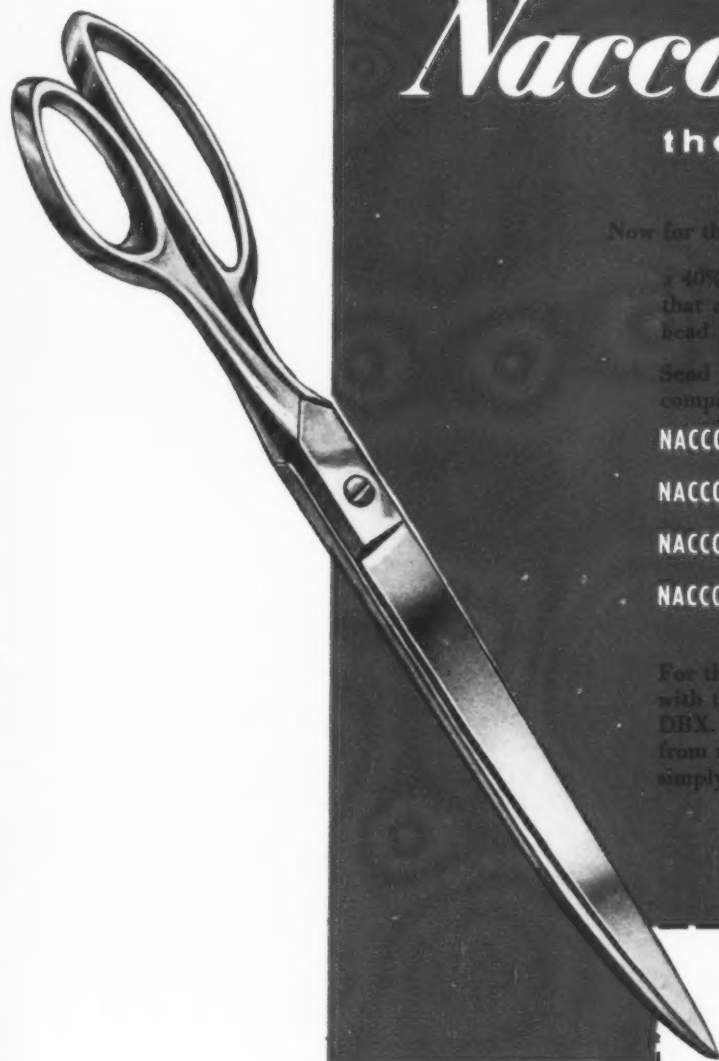
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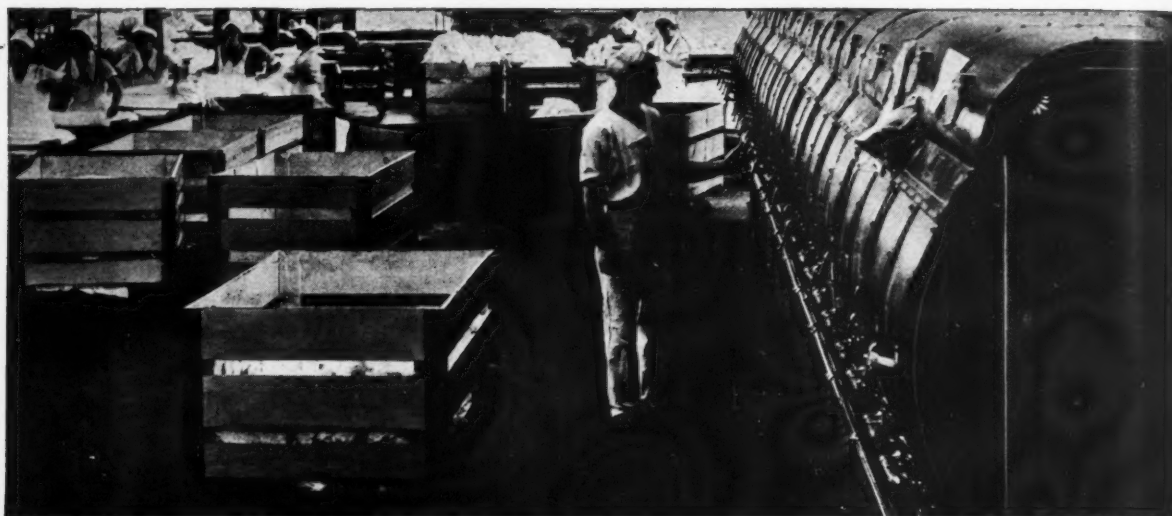
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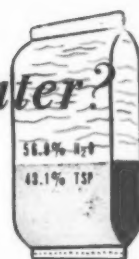
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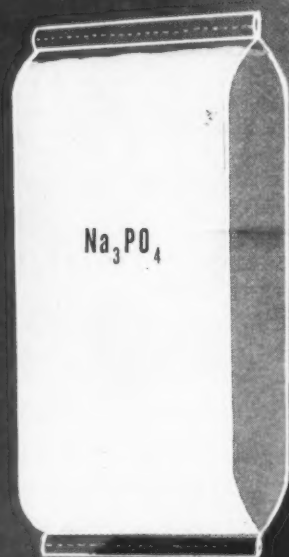


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by Raymond

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- ☐ Include testing sample
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Durability

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Water
Resistance

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Carnauba
Wax

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*intermediate for
synthetic detergents*

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*Emersol® 221 White Elaine
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If you want your products to have maximum protection against separation, breakdown, or deterioration, then this experience of one of our customers may be of value to you:

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Whatever products you are producing, they too will possess maximum stability when you use an Emersol Elaine. Because this includes resistance to yellowing, resistance to rancidity, and resistance to breakdown or deterioration, your products will keep that "just-made" appearance substantially longer. And since Emersol Elaines cost no more than competitive grades, why not obtain this valuable competitive advantage by buying all your oleic acid from Emery?

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After Closing..

Cassullo Heads Fritzsche

The election of John L. Cassullo, treasurer, as president of Fritzsche Brothers, Inc., New York



John L. Cassullo

essential oil and aromatic chemical firm, was announced early this month. Mr. Cassullo, who succeeds John H. Montgomery, retiring head of Fritzsche, has been president of Dodge & Olcott, Inc., New York, since it was acquired by Fritzsche about three years ago.

Other new officers of Fritzsche Brothers include Gustav A. Wohlfort, treasurer, and Ellis F. Merkl, assistant treasurer. Mr. Wohlfort, formerly assistant treasurer, is a veteran of 31 years with Fritzsche and Mr. Merkl has been with the firm 19 years. Mr. Merkl moves up from the post of controller.

Continuing as officers of Fritzsche are Hans P. Wesemann, vice-president, and with the firm 39 years; Dr. Ernest Guenther, vice-president and a 32 year veteran of the organization; and Frederick H. Leonhardt, Jr., vice-president. Mr. Leonhardt, who has been with Fritzsche for 11 years, is the son of the late Frederick H. Leonhardt, Sr., former chairman of the board and president. D. A. Neary continues as secretary and Arthur Hem-

mingier as assistant secretary.

John H. Montgomery, who succeeded Frederick H. Leonhardt as president of Fritzsche Brothers, announced his retirement June 30 after 30 years with the firm. He maintained an active interest in the Essential Oil Association, of which he was president at one time.

Dillon to Alpine

Howard W. Dillon has been appointed sales manager of Alpine Aromatics, Inc., effective July 1, it was announced by R. Pantaleoni, president. For the past 20 years Mr. Dillon has been north-eastern sales manager of Paxton & Mitchell, Omaha, Neb., railroad supplies firm. Prior to that he served as sales engineer of Gold Car Heating and Lighting Co., New York.

Vestal Advances Baker

Vestal, Inc., St. Louis, announced early this month the appointment of Adair Baker as vice-president of manufacturing and research. Mr. Baker went with Vestal in 1948 as plant superintendent. He has served as the firm's technical service director since 1954. The new vice-president is currently serving on technical committees of the Chemical Specialties Manu-

Adair Baker



facturers Association and of the American Society for Testing Materials.

Yowell to Airkem

Edwin J. Yowell has joined Airkem, Inc., New York, as division manager in charge of national account sales, it was announced late in June by Frank W.



Edwin J. Yowell

Conkling, vice-president in charge of sales. In addition to developing the national account business, Mr. Yowell will be responsible for the firm's system of exclusive distributorships throughout the United States. Before joining Airkem, he was director of promotion for the Diocese of New York. Earlier he had served as the Manhattan representative of the Union Special Machine Co., Chicago, Ill.

West End, Stauffer Merge

West End Chemical Co. and Stauffer Chemical Co. announced late last month that their boards of directors have approved a plan of merger of West End into Stauffer. The plan provides for an exchange of one share of Stauffer common stock for 5.6 shares of West End common stock and one share of Stauffer common stock for 60 shares of West End preferred, excluding the share of both classes of West End which are owned by Stauffer.

Of 2,012,197 shares of West End common and 1,609,341 shares

of preferred currently in the hands of the public, Stauffer owns 321,119 shares of common and 596,175 shares of preferred.

West End will continue to operate as an autonomous division of Stauffer under the designation of West End Chemical Co., Division of Stauffer Chemical Co. Stauffer has been exclusive sales agent for West End's borax for over 25 years. Other West End products include soda ash, salt cake, and lime. The firm's manufacturing plant is at Searles Lake, Calif.

Hercules Education Grants

Hercules Powder Co., Wilmington, Del., recently gave \$70,000 in unrestricted grants to 21 United States colleges and universities. In the past years Hercules has provided fellowships, scholarships, and grants-in-aid amounting to about \$85,000 a year, but restricted to some extent, according to Albert E. Forster, president and chairman of the board, who made the announcement. This latest grant brings the company's annual contribution for education to more than \$150,000.

Henry R. Schmidt Dies

Henry R. Schmidt, 60, for the past three and one half years sales manager of Marman Soap Co., Milwaukee, Wis., died June 4 in Swedish Covenant Hospital, Chicago. Prior to joining Marman he had served as sales manager for M. Werk Co., Cincinnati, over a period of several years and had been associated for shorter periods of time with Colgate-Palmolive Co., New York, and Allen B. Wrisley Co., Chicago. Mr. Schmidt came to Chicago in 1924 as mid-western sales manager of Sunshine Soda Co., New York, distributors for Diamond Alkali Co. During his association with this firm he also handled sales of Colgate soaps to the laundry industry in the mid-west.

Mr. Schmidt is survived by his wife; a son, Lt. Wesley H. Schmidt, U.S.N.; his mother; a brother and five grandsons.

Leonhardt D&O President

Frederick H. Leonhardt, Jr., has been elected president of Dodge & Olcott, Inc., New York essential



Frederick H. Leonhardt, Jr.

oil, aromatic chemical and flavor and perfume base firm, it was announced early this month. He succeeds John L. Cassullo, who has been named president of Fritzsche Brothers, Inc., New York, of which D&O is a wholly owned subsidiary. Mr. Leonhardt, son of the late Frederick H. Leonhardt, Sr., founder and former chairman and president of Fritzsche Brothers, moves up from the vice-presidency of D&O. He is also a vice-president of Fritzsche. Mr. Leonhardt has been with D&O since it was acquired by Fritzsche about three years ago.

New vice-president and treasurer of D&O is R. V. Behrens, who served previously as treasurer. Another new vice-president is Jules P. Bauer, former D&O sales coordinator. Continuing as a vice-president is V. H. Fischer. E. M. Behme, newly elected secretary of D&O, formerly was in the firm's controller's office. Louis Young continues as assistant treasurer. Paul Sperry remains as sales manager of essential oil, aromatic chemicals, flavor and perfume bases.

Aromatic Newport Agent

Appointment of Aromatic Products, Inc., New York, as exclusive selling agents for menthol dl (racemic) and thymol, N.F., made by Newport Industries, Inc.,

New York, was announced last month. Both products will be sold by Aromatic Products salesmen working out of New York, Chicago, Dallas, Memphis, Pittsburgh, Los Angeles, Boston, and Fort Lauderdale. The menthol and thymol are derived from natural terpenes originating from Newport's large scale naval stores operations in the south.

New Bridgeport Reps.

Bridgeport Brass Co., Bridgeport, Conn., has appointed three new representatives for its line of pressure packaged products, it was announced late in June by Walter E. Anderson, sales manager of the firm's "Aer*a*sol" products.

Glen Smyth Co., housewares representatives in Dallas, Tex., will handle the firm's full line of "Aer*a*sol" space and residual insecticides, moth proofers, air refreshers, lawn and garden and other pressure packaged specialties in Texas, Louisiana, Arkansas, and Oklahoma.

Two Virginia food brokers will handle the Bridgeport aerosol line in the Richmond and Norfolk areas, respectively: A. D. Jackson & Sons of Richmond and Tidewater Associated Brokerage Co., Norfolk.

Colgate Wins Injunction

A preliminary injunction was issued last month restraining several dealers in Massachusetts from selling toilet goods made by Colgate-Palmolive Co., New York, at less than fair trade prices. The injunction was granted by Judge Alrich of the U. S. District Court in Boston, who had previously ruled that price cutting on fair traded merchandise could result from the use of trading stamps and had withheld an injunction pending action by Colgate.

The firms enjoined include Max Dichter & Sons, who operate the Forest Hills Factory Outlet at Jamaica Plain; Alric, Inc., Brookline, Mass.; Marrud, Inc., Jamaica Plain; Di-Deb, Inc., Providence, R. I.; Jacob E. Margolis, Allston; and Harold Rudnick of Boston.

SAE Clarifies Its Policy on Brake Fluids

THE Society of Automotive Engineers, Inc., New York, in an attempt to clarify certain of its policies has sent *Soap & Chemical Specialties* a copy of a letter written to Dr. Harold Lederer of R. M. Hollingshead Corp., Camden, N. J., commenting on an article of his, which appeared in the May, 1956 issue of *Soap*. The article, "Trends in Brake Fluid Laws," was based on a paper Dr. Lederer read at the 42nd annual meeting of the Chemical Specialties Manufacturers Association in New York, last December.

Dr. Lederer has sent us a copy of his letter to Joseph Gilbert, secretary of the technical board of SAE. Both Mr. Gilbert's and Dr. Lederer's letters are published in full below:

Editor:

You may be interested in the attached letter which comments on the article, "Trends in Brake Fluid Laws," which appeared in the May, 1956 issue of *Soap & Chemical Specialties*.

I believe the letter is self explanatory and points out why the Society (Society of Automotive Engineers) is concerned about several of the statements made in Dr. Lederer's article.

Secretary, Technical Board
Joseph Gilbert,
Society of Automotive Engineers, Inc.
New York, N. Y.

"Dr. Harold G. Lederer
Manager, Specialties Section
Technical Services Division
R. M. Hollingshead Corporation
Camden, New Jersey

Dear Dr. Lederer:

"Our attention has been called to your article, 'Trends in Brake Fluid Laws,' in the May, 1956 issue of *Soap and Chemical Specialties* magazine, based on your paper presented at the 1955 CSMA annual meeting.

"You are to be complimented on the article's analysis of specifications, regulations, and enforcement related to brake fluids.

"There is, however, one paragraph in the article which conveys an incorrect impression of a carefully adhered-to fundamental in SAE technical commit-

tee work. It's the one that says:

"The purpose of the S.A.E. committee is to make better and clearer specifications and to improve the fluid. The committee suggests what it considers best in a product by its specifications which are subject to change. Due to the possible changes, the S.A.E. asks the state authorities, if they wish to use their specifications, not to specify any year they appear in the Handbook, and not to specify by any number, but to merely state the fluid must meet the minimum standards of the Society of Automotive Engineers for heavy duty brake fluid. The Society wishes to keep its specification flexible and if changes are made S.A.E. requests the states now having legislation to change their requirements as the S.A.E. changes its specification."

"This paragraph implies that the Society asks state authorities to use the SAE specifications in state legislation. An inviolable principle in its cooperative technical program which the Society abides by is that: SAE technical reports and recommendations in them are purely advisory. Their use by anyone in industry or government is entirely voluntary. There is no agreement to adhere to such technical recommendations.

"In other words, SAE doesn't ask, encourage, suggest, or force the use of its standards and specifications. The Society merely develops what is considered to be the soundest engineering recommendation, produced collectively by the group of leading engineering specialists serving on the particular committee.

"It is true that SAE tries to keep its standards and specifications up-to-date with current technical progress. The SAE Hydraulic Brake Fluid Standard is no exception. And when asked by the states about any of its standards that may be considered as guides to legislation, the Society does point out the possibility of changes and suggests that the states might find it feasible not to pinpoint a standard of any particular year should they wish to refer to an SAE standard in legislation.

"The difference between your statement on the Society's procedures on the relationship of its standards to legislation and what *actually* is the case may appear to be a fine one. However, we consider this to be a key principle of our cooperative technical program.

"Thanks for having given me the opportunity to 'visit' with you through this letter and to explain our position.

Joseph Gilbert
Secretary, Technical Board
Society of Automotive Engineers, Inc."

"Dear Mr. Gilbert:

"Thank you for your letter of July 9 in reference to my article in the May, 1956 issue of *Soap & Chemical*

Specialties, 'Trends in Brake Fluid Laws'.

"You are correct in calling me to 'task' for the statement (made in the article) 'Due to the possible changes, the SAE *ASKS* the state authorities, etc. . . . I know that the Society does not ask, force or insist that industry accept any of its specifications, but only recommends.

"In reviewing my paper before delivery and publication, and to make positive that there would be no misleading statements, I asked one of the SAE staff members to review the paper. He found several errors such as you mentioned and we corrected them. However, the above statement was not noticed.

"To clarify further the Society's position the following was included in the paper on page 187 of the May issue (of *Soap*):

"... The SAE Handbook is published by the Society of Automotive Engineers, a group of engineers who exchange technical information for the scientific advancement of the automotive industry. Their reports and specifications are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary."

"In order that there be no misunderstanding and with your permission, I am asking *SOAP* to publish your letter to me and my reply to you.

Harold G. Lederer, Ph.D.
R. M. Hollingshead Corp.
Chairman, Automotive Division,
Chemical Specialties Manufacturers Assn."

Form Foil Firm

Formation of a new company, Cochran Continental Container Corp., Louisville, Ky., was announced June 19 by Lucius D. Clay, chairman of Continental Can Co. and Archie P. Cochran, president of Cochran Foil Co. The new company, owned equally by Cochran and Continental, will have headquarters and principal plant facilities in Louisville. Its line will include rigid aluminum foil containers for a number of industries.

New Anchor Hocking Office

Anchor Hocking Glass Corp., Lancaster, O., recently announced the removal of the northern California sales offices of its Pacific Coast Closure and Tableware Divisions and of its subsidiary, Maywood Glass Co. The offices have been moved from 245 California Street to 340 Market Street, San Francisco 11. Telephone number remains Yukon 2-2134.

Babbitt ConnChem Merger

B. T. Babbitt, Inc., New York, has entered into agreement to merge with Bostwick Laboratories, Inc., Bridgeport, Conn., and its parent company Connecticut Chemical Research Corp., also of Bridgeport, it was announced July 11. The boards of directors of all three companies have approved the move which involves exchange of all outstanding stock of the three firms. The agreement is subject to the approval of the stockholders of Babbitt.

B. T. Babbitt, which is a 120 year old soap making and cleaner firm, if consolidated with Connecticut Chemical Research Corp. and Bostwick, would make its first entry into the field of pressure packaging. Babbitt would market "Hep" aerosol insecticide, "Hep" spray type pot cleaner and about 14 other household aerosol products made by Bostwick. These would be distributed through hardware, housewares and grocery stores.

If the agreement is approved, Connecticut Chemical Research Corp. will operate as a separate unit under the direction of A. O. Samuels, president and founder. He will remain as president of the corporation, which will continue to be devoted exclusively to research, development and production of private label aerosol products for marketing in the drug, cosmetic and housewares fields.

— ★ —

CSMA Proceedings

The Proceedings of the 42nd annual meeting of the Chemical Specialties Manufacturers Association are now available, it was announced early this month by H. W. Hamilton, secretary. The 230-page paper-bound book contains the complete texts of all available papers, committee reports, resolutions and records of other business transacted at the meeting, held Dec. 5-7, 1955, at the Hotel Roosevelt, New York. Copies are sent to each registrant at the meeting, and additional copies are available for \$7.50 each in the United States; \$8.00 a copy for foreign countries. Those wishing

to obtain copies should send check with order to Chemical Specialties Manufacturers Association, 50 E. 41st St., New York 17, N. Y.

— ★ —

I. E. Smith Retires

Irwin E. Smith, since 1944 sales manager of Victor Chemical Works, Chicago, retired June 30 after 29 years with the company. A native of Denver, he is a past president of the Chicago Drug and Chemical Association, and has served as a director and committeeman of other industry groups. Mr. Smith plans to become a resident of the San Francisco Peninsula.

— ★ —

French Shell Expands

Shell-Saint Gobain S. A. recently announced plans to expand its facilities for the manufacture of alkylates for use in powder detergents and of other petrochemicals. The program involves an expenditure of 5,000 million French francs. Shell-Saint Gobain is a petrochemical firm formed jointly by Shell Francaise, the French affiliate of the Shell-Royal Dutch group and Saint Gobain, a chemical manufacturer.

— ★ —

Tussy Ad Manager

Tussy Cosmetics, one of the three major divisions of Lehn & Fink Products Corp., New York, has appointed John H. Thomas as advertising manager, it was announced July 2, by Paul Carey, Tussy general manager.

Prior to his new appointment, Mr. Thomas was associated with Indian Head Mills, Inc., New York; Sloane-Delaware Floor Products division of Congoleum-Nairn, Inc., Trenton, N.J.; and Dominion Textile Co., Montreal, Canada. In his new position Mr. Thomas will supervise and coordinate all national campaigns and cooperative advertising programs for Tussy, including print and radio-television media and point-of-purchase merchandizing displays.

Tussy originated in France under the name Parfumerie Lesquendieu, and has been manufactured and distributed by Lehn & Fink since 1926.

Asks Soap Suit Rule Change

A motion of the Department of Justice was taken under advisement last month by Federal Judge Alfred E. Modarelli to reconsider his decision to open grand jury minutes to defendants of the soap industry in a civil antitrust suit. Defendants in the case are Colgate-Palmolive Co., New York, Procter & Gamble Co., Cincinnati, Lever Brothers Co., New York, and the Association of American Soap & Glycerine Producers, New York.

The suit has been delayed in reaching a trial for almost four years because of pretrial arguments over records. A criminal suit earlier was dropped when a grand jury failed to indict the three soap companies and their trade association.

Records subpoenaed by the Department of Justice in the criminal suit are understood to have furnished part of the basis for the current civil suit. The defending soap companies and the soap association requested and were given permission to examine the disclosures made before the grand jury in the criminal suit in order to defend themselves in the current suit. The Department of Justice advised the court it would provide the defendants names of witnesses who appeared before the inquest in its probe in 1951 and 1952, but pleaded that "a complete and sweeping" disclosure of the testimony was inimical to public policy and interest.

The court was urged not to wipe out the traditional secrecy of the grand jury. Judge Modarelli questioned whether his decision meant a "sweeping disclosure" of everything said in the grand jury room. He stated that he thought his decision as applied to an antitrust case was correct, but that it did not pertain to all kinds of cases.

— ★ —

New Tube Booklet

National Collapsible Tube Co., Providence, R. I., recently announced a new twelve-page booklet entitled "Tube Talk". This booklet explains just what collapsible tubes are, and how to select the right tube.

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*(100% active nonionic ethylene
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A powerful, low foaming detergent
over wide temperature ranges.

Compatible with soaps, anionics, ca-
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metal salts and alkaline builders.

Soluble in wide range of organic sol-
vents and electrolytic solutions.

Suggested uses — automatic laundry
and dishwasher detergents, car wash
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*(100% active alkylolamide
condensate)*

Excellent detergency on fabrics.

High foaming, a good wetting agent
with low viscosity curve.

Effective with alkaline builders.

Suggested uses — Dairy cleaners,
household degreasers, wax emulsions.

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*(100% active lauric acid
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Superior foam stabilizer for anionics.

Remarkable thickening action over
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Suggested uses — liquid dishwasher,
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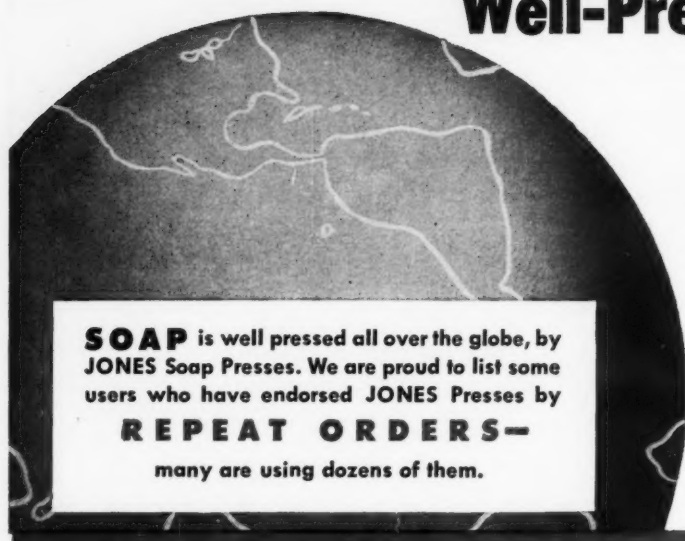
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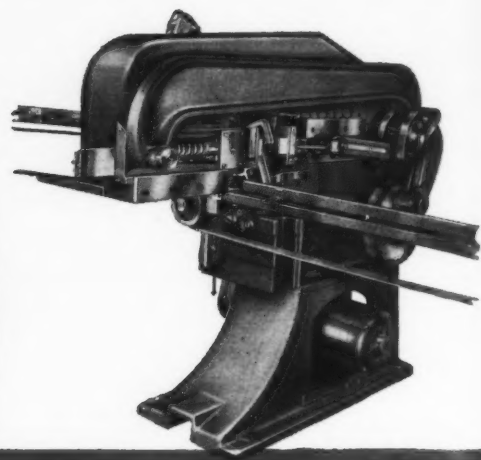


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Cartoning Machines—Soap Presses


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... in brief

as the editor sees it . . .

 **STEEL STRIKE . . .** The shutdown early this month of the steel mills could, if prolonged, have a decidedly bad effect on the chemical specialties manufacturing industry and soap and detergent marketers who pack their products in cans and pails. Metal containers are an all-important part of the packaging operation of practically every specialty maker. Fortunately, steel production in the first six months of this year has been at near-record levels, and container makers assure us that they have adequate supplies of plate for containers. Whether supplies are ample to last if the strike is drawn out is the big question mark. A shortage of metal containers at a time when business in the specialties field is good could really hurt. In fact it is the one dark cloud on an otherwise bright horizon.

* * * * *

 **LIQUID DETERGENTS . . .** Will sales of liquid detergents hit 40 million gallons this year? The trend certainly seems to be in that direction. With first quarter sales (approximately 7 million gallons) better than half those of the entire total for 1955, and allowing an average quarterly gain of 30 percent, the 40 million gallon figure is not too far off.


So called light duty liquids have made remarkable gains, with the heavy duty, clothes washing liquids just coming into the picture. Although distribution of the heavy duty liquids has been limited thus far, it is possible that by the end of the year one or more of these products will be distributed nationally. The early success of the few heavy duty liquids has urged firms not now marketing such products to speed up research in order not to be left behind.

The test marketing of a half-gallon container for one of the heavy duties, the largest liquid detergent package so far, is being watched closely by detergent marketers to gauge consumer acceptance.

That liquid detergents are big volume and growing items may be surmised from the fact that one can producer now has capacity to turn out a billion liquid detergent cans a year. Also indicative of the trend is the dismantling by one large soaper of a spray drying tower to make way for a liquid detergent filling line.

Are detergent powders destined to go the way of soap? A somewhat startling question.

* * * * *

 **STERILE SOAP . . .** A doctor at Johns Hopkins Hospital in Baltimore recently made the headlines in newspapers throughout the country with a startling discovery. He found that soap in itself does not kill germs and that liquid soaps used in operating rooms are not sterile. In fact, such soaps are subject to contamination by bacteria and are potential sources of postoperative infection. Johns Hopkins Hospital is now subjecting all soaps used in operating rooms to sterilization by autoclave.

That soap does not kill germs hardly seems to qualify as a "revolutionary discovery." A telephone call to his nearest soap maker would have given him the answer as to the lack of germicidal power of soap and thus saved many hours spent in researching the point. That an M. D. doesn't know, and press clippings indicate that many of them do not, that soap is no germ killer is a real shocker.

As for sterilizing soap, what is that expected to accomplish? If a surgeon washes his hands



liquid detergent

RAW MATERIALS

Among the many synthetic liquid detergent raw materials offered by the Stepan Chemical Company, you are certain to find just the right characteristics for your use and price requirements. Our laboratory would, of course, be pleased to work with you on any particular problems you might have.

Many formulators find that the completeness of

the Stepan line of liquid detergent raw materials makes it readily possible to achieve substantial economies by ordering mixed truckloads or carloads effecting the lower carload price on all of the individual items.

A few of the products of particular interest in the Stepan line of liquid detergent raw materials are given below.

STEPAN *DS-60*

A specially processed, desalted, sodium alkyl aryl sulfonate. It is a high active slurry in an alcoholic solution and is an excellent and economical foaming, wetting and dispersing agent. In addition to its use in liquid dishwashing detergents, it is also an effective detergent for cotton, wool and synthetic fibers.

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A 100% active, fatty acid alkylolamide and nonionic in character. It provides superior foam stability, detergency, and gives good sudsing quality in the presence of grease. LDA is also noted for being a splendid thickening agent, and an auxiliary emulsifier helping to counteract the defatting action of alkyl aryl sulfonates.

STEPANOL *B-153*

An ethoxylated nonyl phenol sulfate, 60% active. It is a clear amber liquid with a mild, pleasant alcohol odor. B-153 gives a high and closely knit flash foam to liquid dishwashing detergents. It is also a good auxiliary detergent and is relatively mild to the skin.

MAKON *10*

A 100% active ethoxylated nonionic. It imparts excellent grease emulsification to liquid dishwashing detergents and makes possible better drainage, helping to eliminate film. Among its other advantages NP-10 can aid in lowering the cloud point of a liquid detergent formulation.

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Dimethyl Sulfoxide • Fatty Alcohol Sulfates • Bulk Liquid Detergents • Sulfonated Oils • Amides • Foam Stabilizers • Alkylphenol Polyalkoxy Sulfates

with sterilized soap, does that insure the skin is germ free? Or if surgical instruments are washed in soap and water after an operation, aren't they then sterilized before being used again?

These questions remain unanswered, meantime the headlines proclaim "Soaps Used in Hospitals 'Infectious'," which must be reassuring to the public in a country in which soap consumption and health standards are the highest.


* * * * *

 **FLOOR WAXES . . .** Is too much emphasis placed on price in selling floor waxes? Should greater emphasis be given to appearance of floors and its value in attracting customer to retail and other commercial establishments?

Recently, when visiting a newly opened six million dollar research laboratory one of the things that impressed us most was the attractive appearance of the floors. The six or eight different types of floors and floor coverings used throughout the building were clean. Floors that could be waxed were glossy, not slippery, and were free of scuff marks. The net impression to the visitor was: here is a building that is neat, clean and well cared for. Quite a contrast with some of the public buildings we have seen recently.

So maybe floor finish and cleaner makers should stress the value of good looking floors to attract customers rather than using the outmoded approach of "my wax is cheaper."

* * * * *


 **WORLD'S FIRST . . .** It must be the age we live in,—or something. Anyway, you disinfectant and antiseptic manufacturers might as well close up shop for we have just read an announcement of the "Age of Germ-Proof Living." An announcement of "the world's first effective antiseptic!" The new material can keep your product "odor proof, mold proof, fungi proof . . . and even moth proof for its lifetime." It adds little or nothing to the cost and is easy to use. It gives

a shower curtain that never mildews, bread in a germ proof package,—and, underwear that's forever odor proof.

So, good friends, here's your chance. If you want to wear the same underwear forever, that opportunity is now yours. And as for believing that your quats, pines or other germicides have been effective all these years, we must remind you that you have probably been all wet. For the world's first effective antiseptic has just arrived. And announced with double page spreads in the textile trades leading publication! All of which sounds like a sure fire way to cause an investigation to be made by the Better Business Bureau.

We figured to let the disinfectant makers know about this new product right quick so that they can switch their plants over to making something else like can openers or bubble gum.

* * * * *

 **QUICKIE . . .** The sure sign in our book of an immature manufacturing outfit, irrespective of size, is one which conceives an idea for a new product today and wants to put it on the market yesterday. Yet, we see it happen time and time again. Get the product to market in a big sweat to beat competition to the punch or to get out an imitation of a hot competitive product. No difference. Same breed of cat. Inevitably the product is a half-baked affair.

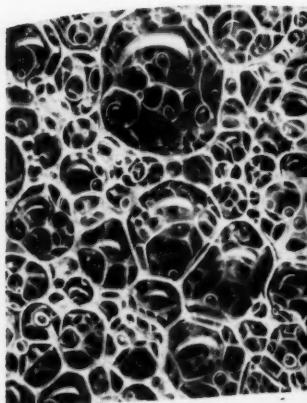
Then are added the problems of suppliers of raw material and packages, mostly the latter. The maker of the new item has got to have bottles or cans or cartons and he wants a car rolling on an impossible time schedule. He refuses to consider that the bottle or can maker might have another customer. Stop everything. The hell with the other guy. He's got to have those cans, those bottles, and quick. And with a situation such as we have today, he is fast driving the package supplier to ulcers or worse.

Having seen so many marketing mistakes made over the years, most of them with these quickie products, we've become well fed up with these hurry-up marble heads. What they'll do for a quick buck is a caution.

PILOT

HD-90

FOR MORE DETERGENT SUDS PER DOLLAR



PILOT HD-90 DETERGENT contains less sulfate and more active ingredient than any other product at competitive prices

PILOT HD-90 is odorless, dust-free, dry flowing and whiter in color

PILOT HD-90 is cold processed, high active Alkyl Aryl Sulfonate; 90% minimum active drum dried flake

More detergent suds *immediately* increase consumer acceptance for your product! Every micelle produced in solution from Pilot HD-90 is homogeneously effective for uses such as household suders, industrial detergents and scouring powders. Cold processing eliminates odors, undesirable oils, stickiness and other bad characteristics from molecular rearrangement and side reactions. Pilot HD-90's high quality in the making and mixing of dry products is equally applicable to the manufacture of liquid detergents. Pilot HD-90's concentrated and low sulfate properties minimize filtering; give liquids the highest sudsing and cleansing powers obtainable. Write for formulas and samples. *Only Pilot HD-90 Detergent features this premium quality at competitive prices!*

Packed in polyethylene lined fibre drums and 5-ply paper bags.



PILOT Chemical Co. Manufacturers of
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Sulfonic Acids
Dodecyl Benzene Sulfonates
Sodium Toluene Sulfonate

as the reader sees it...

Researches Misunderstood

Editor:

In the March issue of *Soap & Chemical Specialties* you published the second part of a paper by Dr. S. K. Freeman which dealt with the stability of allethrin and the "pyrethrins." This publication referred to some researches carried out by N. C. Brown and me and it would appear that Dr. Freeman has misunderstood, in some part, this work of ours.

The paper (Dr. Freeman's) gave an important insight into the changes occurring under various conditions of storage, heating and artificial irradiation. We had already carried out certain researches on the changes which take place when films of pyrethrum extract are subjected to artificial irradiation and our experimental findings follow the pattern described by Freeman. (See article by Brown and Phipers in *Pyrethrum Post*, 1953, 3, (4), 23.) However, we feel that some misunderstanding has occurred for he states that our "conclusions should be viewed with suspicion." Freeman agrees with us that chlorophyll is a catalyst for the decomposition of pyrethrins but he has doubted our further deductions by arguing that the normal Seil (see article in *Soap & Sanitary Chemicals*, 1947, 23, (9), 131) method of analysis includes a petrol separation but the spectrophotometric method of Shukis, Cristi and Wachs (published in *Soap & Sanitary Chemicals*, 1951, 27, (11), 124) does not. We think an important point in our publication has not been recognized because we anticipated this potential source of error. When we described our methods of analysis, we specifically stated on page 24, top of column one in the article in *Pyrethrum Post* that our samples were saponified directly and not subjected to a separation with petrol.

The Seil method estimates

the acidic portion of the pyrethrin molecule and the spectrophotometric method relies principally on the absorption of ultra-violet light by the cyclopentenolone portion. It follows that the figures we obtained from the analysis of the acidic portion of the molecule take into account not only the pyrethrins and cinerins, but also any substances which whilst unaffected in the acidic part have suffered alteration in the cyclopentenolone moiety. We therefore contend that chlorophyll catalyses the decomposition of chrysanthemic acid. Our conclusion has received support from other researches. In a recent publication in *Pyrethrum Post*, 1956, 4, (1), 30, by Brown, Hollinshead, Phipers and

Wood, we have shown that when steps are taken to remove degradation products, then the degradation of chrysanthemic esters (pyrethrin I and cinerin I) is much greater than that of the corresponding pyrethric esters (pyrethrin II and cinerin II).

N. C. Brown and R. F. Phipers,
Cooper Technical Bureau,
Berkhamsted, England

— ★ —

Duke in New Plant

Duke Laboratories, Inc., moved July 1 from Stamford, Conn., to its new plant at Duke Place, South Norwalk, Conn. Production facilities, laboratories, and offices are housed in a 60,000 square feet one-story building. Duke makes "Basis" soap, "Nivea" products, and a number of other specialties. The firm's new address is P. O. Box 529, telephone Norwalk, TEmple 8-4737.

Turtle in the Sky . . .

A three-dimensional sign, 7½ stories high, topped off by a 34 foot replica of the company's trademark—a turtle—was unveiled in Chicago, June 15 by Plastone Co., maker of "Turtle Wax" and other chemical specialties. The turtle itself is made of 3,200 square feet of fiber glass and, with supporting steel framework, weighs 15,000 pounds. The sign, claimed to be the country's largest "3-D" job, is situated at the top of a ten story building. The sign, which tells the weather, and also has other devices for telling the time and temperature, cost \$200,000, according to Ben Hirsch, president of Plastone. The building from which the sign rises is located at Madison, Ashland and Ogden avenues, two miles west of Chicago's downtown "Loop" district. Standing upright on its tail, Mr. Turtle rotates on a steel column two feet in diameter and, depending on the weather forecast, its translucent back changes color. Red is for warm weather; blue for cold; white for rain or snow, and green for "no change." Letters on the sign are 7½ and 10 feet high and figures on the clock are eight feet high. In addition to "Turtle Wax," Plastone's products include: "Mrs. Turtle" glass cleaner; "Tommy Turtle" bicycle polish; "Plastone" auto polish; "Trim" side wall tire cleaner; "Turtle Wax" auto polish; "Chrome-aid," and "Dam" radiator sealer. Plastone's plant is located at 4100 West Grand Ave. in Chicago.





HUNTING

for a dry bleach for the home-laundry market?

Halane will give your product these exclusive advantages:

Safety

Halane will not damage cotton, rayon, nylon or acetate fabrics. It's so safe that it could be added directly to fabrics made of these fibers, in concentrated form, without danger of "burning" or "pinholing"! Halane bleaching powders can be safely packaged in either glass containers or cardboard boxes.

New, low cost

Halane is the most widely used organic, chlorine-bearing base for dry bleaches in the home-laundry field. As a result of this sales volume and greater production economies, the price of Halane has dropped to a new low . . . send for a Halane price schedule.

Whiter whites through "controlled bleaching"

Even the most badly grayed fabrics come out sparkling white after a Halane bleach. That's because Halane releases the bleaching ingredient (active hypochlorous acid) at a controlled rate—depending on individual bleaching conditions.

Longer fabric life

In an actual 20-cycle laundry test, clothes bleached with Halane showed only a 2% loss in tensile strength, compared with a 10% loss suffered in ordinary hypochlorite bleaching.

Bleaches in soak, wash or rinse cycles

Halane is compatible with synthetic detergents or soaps . . . it can be added to the washer along with soaps and syndets, and will not form curds.

Our skilled chemists and engineers . . . modern research laboratories . . . and 65 years' experience as a leading producer of chemicals, are at your service. A copy of our new Halane data sheet can help you plan a formulation for the home-laundry market . . . send for it today. Wyandotte Chemicals Corporation, Dept. SCS-7, Wyandotte, Michigan. Offices in principal cities.



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OTHER ORGANIC AND INORGANIC CHEMICALS

Radioactive tracer techniques in

Fabric Washing Studies

By Christos Manos*

Research and Development Department,
Colgate-Palmolive Co.,
New York, N. Y.

THE use of isotopes in chemical research is itself not new, but before we had nuclear reactors various radioisotopes were made through the use of cyclotrons and other sources of high speed subatomic particles. They could thus be produced only in minute quantities, at considerable cost. Although their importance as research tools was recognized, they were available to only a few investigators. The discovery of nuclear fission greatly changed the situation. The nuclear reactor, in which Uranium 235 is fissioned through a chain reaction process, is a source of radioisotopes in quantities millions of times greater than available previously, with a much greater variety of radiations, and at greatly reduced cost.

Radioisotopes are produced in a nuclear reactor by either of two processes: (1) The two parts into which a uranium atom splits, during the fission process, are radioisotopes of the elements from zinc to gadolinium and can be chemically separated from the remaining uranium. (2) Materials inserted into the reactor can themselves be made radioactive by absorption of activity.

The use of radioisotopes has grown phenomenally since they were first made available. In the first year of the isotope distribution program which began in August 1946, approximately 280 radioisotope shipments were made from

Oak Ridge National Laboratory to 83 institutions which used them primarily in fundamental research problems. During the first 8½ years of distribution more than 63,000 shipments have been made from the Oak Ridge National Laboratory to over 2,400 institutions throughout the country, and the present average shipment is about 80 times the size of those in the early days of the program.

Radioactive forms can be made of every element. Indeed, a total of 81 elements account for the 270-odd stable forms, whereas 100 elements have more than 900 different radioactive forms, so there is quite a selection to choose from. Their "half-life," a measure of their stability, varies from fractions of a second to millions of years. In some cases, their very short life may limit their usefulness in certain applications.

The singular value of radioisotopes stems from two facts. They give off a wide variety of radiations and they can be detected with extreme sensitivity. It follows then, that they can be used in two distinct ways, either as (1) sources of radiation or (2) as tracer atoms. Here, I shall confine myself to the more unique application, their use as tracers.

Radioactive atoms behave chemically like the stable atoms of the same element and since they give off identifying radiations, a radioisotope can be used to trace the fate of the ordinary stable atoms of that element.

With this brief introduction we can now get down to the more specific uses of radioisotopes in the field of detergency, and perhaps we can very appropriately call the theme of this section, "Radioactive Dirt Can't Hide."

Standard methods for detergency evaluation, in general, utilize either naturally soiled family laundry or cloth swatches which are artificially soiled with some simulated soil. The detergent's efficiency is measured by the proportion of soil removed. Commonly, this soil is measured optically, either by eye or by instruments, but in either case, the amount of soil must be relatively high in order to give a perceptible difference in whiteness. Usually many cycles of soiling and washing are required in evaluating detergents by the use of family wash, since natural soil levels are not normally high enough to be read accurately after one cycle. When the soil load is artificially increased to make measurement easier, then the validity of the conclusions becomes more questionable when they are applied to actual laundry practice.

Housewives Critical

HOWEVER, the housewife is justifiably critical, and her interest is in the last traces of soil, which are the hardest to remove and also to measure. Radioisotopes, because of their extreme sensitivity, are a "natural" for this type of problem. For example, 1 mg. of carbon-14 emits 200,000,-

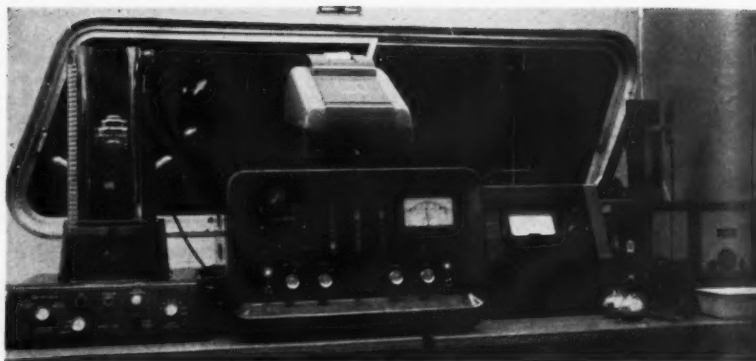
* Paper presented before the 42nd midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 22, 1966.

000 radioactive signals per second. Because of this high activity, radioactive carbon and many other isotopes as well can be diluted many-fold with inactive material and still be traced very easily.

Many different types of soil have been used, with a wide variety of radioactive tracers. Lambert et al. discuss at some length the preparation and use of radioactive soils, including a synthetic soil labeled with radioactive carbon, a synthetic soil labeled with mixed fission products, and a neutron-irradiated soil. Armbruster and Ridenour describe the preparation of two other soils, one a colloidal chromium phosphate and the other a bacterial suspension, both tagged with radioactive phosphorus. Ehrenkranz and Jebe have described the use of carbon-tagged tripalmitin as a fatty type soil. Phansalkar and Vold used a dispersion of colloidal carbon labelled with aged mixed fission products. Each of these soils has particular advantages. For example, carbon has a long half life and emits relatively weak radiation so that no shielding is required. Of course, a tremendous variety of compounds can be made with radioactive carbon as the built-in tracer. A somewhat more detailed description of the procedure which we use may better serve to illustrate some of the techniques involved. In particular, this procedure is one devised by Hensley, Kramer, King and Suter of Wyandotte Chemicals Corporation and is described in the *Journal of the American Oil Chemists Society* of March 1955.

A very small amount of radioactive carbon combined with a small amount of mineral oil is rubbed into the surface of a cloth disc in a reproducible manner by a machine especially designed for the purpose.

It should be noted that the stain is just visible to the eye, approximating a normal soil level. After brushing to remove any loose particles, the radioactive soil is measured by a Geiger counter. We have modified the standard sample

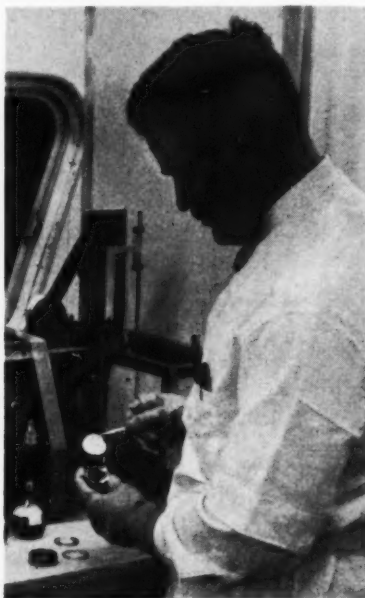


All of the facilities required in experiments with radioactive materials can be set up in a limited space. Here they are shown on the Colgate "Launder-Lab" cruiser, a modern laboratory on wheels equipped to conduct on-the-spot studies anywhere in the United States. The automatic sample changer on the left handles as many as 35 swatches at one time. The printing timer, shown on top of the scales, automatically records the results on paper tape. The smaller rate meter is used for routine monitoring of work areas. The agitator and thermostatted water bath are on the right.

holders to hold the cloth discs so that we may, in one operation, automatically count as many as 35 samples in a commercially available sample changer. Once the changer is loaded and started it requires no further attention and will print the results on paper tape as they are obtained.

The washing apparatus is specially designed for the use of

The author places a fabric swatch soiled with radioactive carbon into a miniature wash vessel. Seven milliliters of detergent solution is added. The assembly is then sealed and mechanically agitated in a thermostatted water bath.



these cloth discs, and uses only 7 ml. of solution, a cloth to solution ratio within the range employed in practical washing operations. Two soiled cloths are mounted face to face in a ring assembly. Small irregularly shaped agitator pieces of stainless steel are placed on top of the cloth inside the upper ring to provide friction between the cloth surfaces as the ring assembly is bounced up and down. The motion also forces detergent solution through the cloth. A clean cloth disc, for measuring soil redeposition, is held at the bottom of the cup portion by a snug fitting ring. This whole assembly is uniformly agitated with a vertical oscillating action which is electrically timed for a five minute cycle. Temperature is controlled by a thermostatted water bath.

After the swatches are removed from the detergent solution, they are pressed for five minutes between filter papers under a 1-kg. weight before drying in an oven.

The cloth discs are then counted exactly as before to determine how much soil has been removed. Similarly, the amount of soil picked up by the redeposition disc is directly measured.

Since it has been found that variation of the soil level over a

(Turn to Page 46)

Benjamin Franklin--Soap Maker

By Victor G. Fourman, Ph.D.

President, Syntomatic Corp.

IN this, the 250th anniversary of the year of his birth, the little known fact that Benjamin Franklin's first job was in a soap "factory" is being recalled. Not only Franklin, but his father as well, engaged in the manufacture of soap. Young Franklin, at age 10, left school to spend the next three years working in the "Sope" and candle business operated in Boston by his father, Josiah Franklin.

Soap making seems to have run in the Franklin family. According to James Parton, in the two volumes, "Life and Times of Benjamin Franklin" (Mason Brothers, New York, 1864), "Toward the end of the second year (of Benjamin's work in his father's soap shop), John Franklin, an elder brother of Benjamin, married and moved to Rhode Island, where he set up for himself as a soap and candle maker."

Perhaps his very first work in his father's soap and candle factory made Benjamin Franklin ever mindful of thrift. The oft-repeated proverbs from Poor Richard's Almanack, such as "A penny saved is a penny earned," apply to the most modern soap plants today, where the rewards are large only as the result of immense volume and great efficiency. This year the world celebrates the two hundred fiftieth anniversary of the birth of Franklin, often spoken of as the American Leonardo da Vinci so versatile was this distinguished author, diplomat and scientist. His father, Josiah Franklin, "sopemaker" and tallow chandler, lived and worked at the sign of The Blue Ball on Milk Street in Boston. In those days, and even at a later time, soaps and candles in America were closely asso-



ciated because both were made of tallow. In fact, when Mr. Procter, a candlemaker, joined forces with Mr. Gamble, a soapmaker, the foundation for one of the greatest soap firms in America was laid.

When young Franklin was only ten he was taken from school to help his father mold candles, stir boiling soap and run errands. After three years of such work he grew restless and was apprenticed to his brother to learn the printing trade. The rest is history.

Parton's book, cited above, commenting on Benjamin Franklin's departure from the soap establishment where his father and brother, John, worked, says: "When a great personage retires from an employment, the public are curious to know something of his successor." This was one William Tinsley, who liked the work even less than Benjamin, for he ran away. In

those days apprenticeship was no more than a form of serfdom as can be seen from the text of this advertisement which appeared in the Boston newspaper, *The New England Courant*, for July, 1722: "Ran away from his Master, Mr. Josiah Franklin, Tallow Chandler, a Manservant, named William Tinsley, about 20 years of age, of middle Stature, black Hair. . . . Whoever shall apprehend the said runaway Servant, and him safely convey to his above said Master, at the Blue Ball, in . . . Boston, shall have forty Shillings Reward, and all necessary charges paid."

Here we are chiefly concerned with Josiah Franklin and the other members of the family who remained in the soap business. The famous son himself described the father affectionately in his *Autobiography*; "excellent constitution . . . ingenious . . . skilled a little in music . . . very handy in the use of tools." Josiah came from England where he worked as a dyer. Twenty years before Benjamin was born the father gave up this trade and went to Boston, then a prosperous and bustling city of six thousand, where he turned to candle making and soap boiling. For nearly three centuries the ancestors of Josiah lived in the quiet parish of Ecton, Northamptonshire, England, whose church register starting with 1559 shows such names as Franklyne and Fracklin. Incidentally, according to Parton's

250th anniversary of Franklin's birth recalls fact that his first job was in his father's soap and candle business.



Tallow-chandler.



Soap Boiler.

Photos courtesy Thomas L. Williams, Williamsburg, Va.

book, "Washington's ancestors lived for several generations in the same English county, Northamptonshire, from which Franklin's ancestors came." It was Josiah who first ventured across the Atlantic; later his famous son traveled from Boston to Philadelphia, then to London and Paris, and finally home in triumph.

Soap Homemade

SOAP making was still a household art in early America even after other industries had developed. The two important ingredients for its manufacture were grease and pot ashes or 'sope ashes' as they were sometimes called. Perhaps the first mention of 'sope ashes' in connection with the New World occurred in a description of Virginia by Captain John Smith (1612) when he wrote of the land he had seen five years before. In discussing the

"commodities in Virginia or that may be had by industrie," he wrote:

"Muscovia and Polonia doe yearly receive many thousands for pitch, tarre, sope ashes, rosin . . . and such like. Then how much hath Virginia the prerogative of all those flourishing kingdoms for the benefit of our land, whenas within one hundred miles all those are to be had, either ready provided by nature, or else to be prepared, were there but industrious men to labour."

The processes used in the Colonies were patterned after those employed in the mother country which, in turn, adopted methods introduced from Italy and Germany during the fourteenth century. For several hundred years soap making changed but little. Most of the soap produced in the world even today is still made in batch lots in kettles for it is

only within recent times that continuous soap making processes have been put into commercial use. An excellent account of the history of soap manufacture in America by Edlund and Lynn of the Association of American Soap and Glycerine Producers appeared in *Soap* almost twenty five years ago.

Early Soap Makers

AS the communities in the thirteen colonies became closely knit, small factories were established. About fifty years before Franklin's father had arrived in Boston and only seventeen years after the landing of the Pilgrims at Plymouth, Mr. Browne, "sope-maker," was granted admittance to Salem (1637). Less than ten years after young Franklin turned from soap making to printing, a John Lucena received the sole right from

Rhode Island to make castile soap in that Colony. In 1735 an advertisement appearing in the *Pennsylvania Gazette* described the virtues of "Super Crown Soap," "the Sweetness of the Flavor and the fine Lather it immediately produces renders it pleasant for the use of Barbers." This was years before TV programs and aerosol shaving creams, yet not too far removed from modern soap. The *Gazette* was printed in The New Printing Office in Philadelphia by Ben Franklin, where the soap of brother John could be purchased. Thus Franklin had not divorced himself entirely from soap. Twenty years later we find that Elizabeth Franklin, widow of Benjamin's brother, John, advertising in the *Boston Evening Post*, stated that there never was any person but the late John Franklin who made true "Crown Soap." The subsequent history of this particular soap enterprise was lost and passed into oblivion. Perhaps the days of the Revolution were so close at hand that the name "Crown Soap" became less and less popular. Half a century after young Franklin started to work in his father's factory, 11,000 pounds of soap were actually exported from the Colonies to the Azores.

Early Soap Making

WHAT was the actual condition of the soap industry in our country before and during the time of Franklin? It has already been pointed out that in the American Colonies soap making was to a great extent a household art. The fats saved from dripping pans were combined with lye leached from wood ashes. In the rural districts soap making at home was carried on well into the twentieth century. Skilled craftsmen proficient in handling fat and ashes for making soap were among those on the second ship which arrived in Jamestown in 1608, so that soap manufacture might well be almost as old as the making of glass at Jamestown, which is considered the oldest manufacturing activity in English America. By the middle of the eighteenth century there were soap boilers in most of the principal cities—in Boston, New York, Philadelphia, Williamsburg and Norfolk among others. The belief that "fancy" soaps were unknown prior to 1800 is erroneous, though their manufacture, like that of all soaps was limited until the advent of the Le Blanc process for the production of soda.

An advertisement from *The*

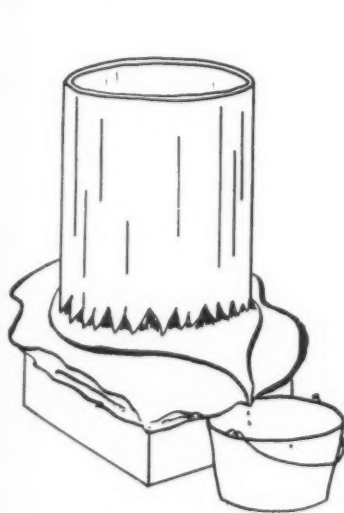
Virginia Gazette (April 1769), published by Purdie and Dixon in Williamsburg clearly reveals the condition of the soap industry during that period:

"Freer Armston, Chandler and Soap Boiler, in Norfolk. For the better Convenience of supplying the Town of Williamsburg, has opened a Shop between Mr. Carter's great Brick House and Mrs. Rathell's, where may be had Tallow Candles as good as any on the Continent; the Present Price by the Box lid paying Freight from Norfolk. Best Hard Soap at 6 d by the Box, or 7 d Half Penny small quantities. . . . As I want a large quantity of Wood Ashes, for Goods or Money all Persons that send by or give their Ashes to Negroes are desired to signify same by Note, otherwise they will not be received. . . ."

Also in the same *Virginia Gazette* appeared this advertisement in July 26, 1776, during the time when we assume the Colonies thought of nothing but war against England:

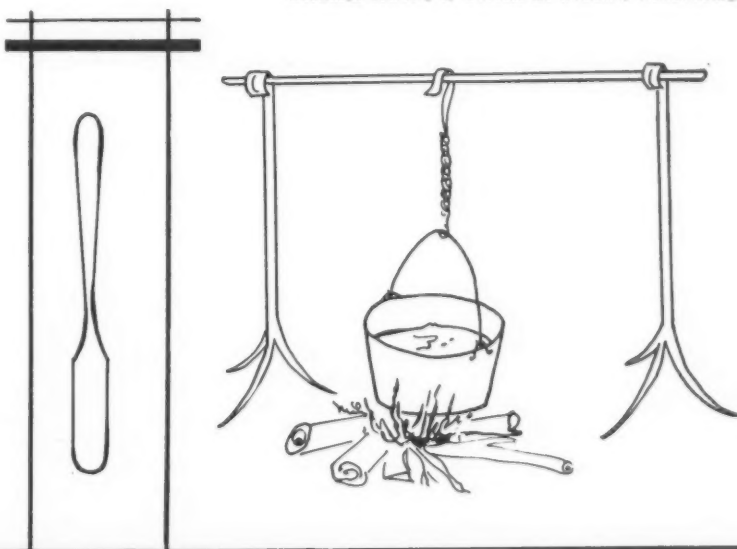
"The Subscriber (lately from Norfolk) begs leave to inform the Publick that he has erected a Manufactory of Soap and Candles in the best manner. He will give 7 d half penny for Tallow,

Equipment used by the housewife in an earlier day consisted of lye barrel with leach stone showing how lye was made



(left). Stirrer used in soap is shown in center, and a kettle of soap being made over the fire appears at right.

Drawings courtesy of Thomas L. Williams, Williamsburg, Va.



10 d for myrtle Wax, . . . for wood Ashes 7 d half Penny per bushel, and 1 s 3 d for tobacco Ashes. He begs the Inhabitants in and about the city to be careful of their Ashes as he shall be able to supply them with good Soap cheaper than they can make it in their families."

With the Mercantile System in force while the Colonies were still under British rule, they were regarded primarily as a source of raw materials and a ready market for finished goods. Hence, whatever little manufacture was carried on in producing soap and other necessary commodities was limited not merely by crudeness of methods, lack of knowledge, enterprise and skill but by artificial barriers set up to keep America from becoming independent of England industrially as well as politically.

In 1791, after the Revolution, Alexander Hamilton, impressed by the successes of new industries, sought to further a great manufacturing interest comparable to that of England. He was one of the founders of The Society for Establishing Useful Manufacturers (SUM). They had combination of letters and alphabet soups even in those early days. The new company was to turn out a long list of products, including paper, carpets, hats, shoes, pottery, ironware, et cetera, but soap is not mentioned as one of the many items, evidently because its production at that time was still a household activity.

J. L. Bishop stated that soap was manufactured in Boston in 1794; if Franklin father's enterprise can be considered a factory, as there is no reason why it should not be, soap was manufactured in Boston on Milk Street as early as 1716. According to Levitt, John Slidell and Company at 50 Broadway, New York City, was among the first soapmakers in the United States. It was here that William Colgate learned the business; later (1806) he started his own company on Dutch Street, in New York, where he was the first soapmaker to render

fats in his own plant. One of the novel features of the early soap made by Colgate was that it was perfumed. Colgate was one of the first soapers to perfume his soaps on a regular basis from the inception of the business in 1806.

As far as is known there are no clear records of the types of perfumes used for soap in the early eighteenth century. Bayberry wax was used to impart a pleasant odor to soap. A Swedish naturalist, Peter Kalm, when visiting the American Colonies (1748) wrote: "here is a plant, from the berries of which they make a kind of wax or tallow . . . from the wax of the candleberry tree (bayberry) they also make a soap which has an agreeable scent and is best for shaving."

From *The Dictionary Polygraphicum*, London, 1735, there is material on the preparation of green soap, made of lye from pot ashes and lime boiled with tallow and oil; also, white and hard soap, but unfortunately, there is no mention about the scenting of these products. It is known that scents obtained by the use of lavender water, orange flower water, and rose water were responsible to a considerable extent for the fragrance of "fancy" soaps in the early part of the eighteenth century. At the start of the nineteenth century there were only about a dozen or so essential oils commercially available. Most of these were used for pharmaceutical purposes and to a limited extent for flavoring but it is possible that a few were employed for scenting soaps. Among the essential oils known to have been marketed in the United States at that time were: anise, clove, caraway, cinnamon, juniper, lavender, peppermint, origanum, pennyroyal, sassafras, and turpentine. These are all still used today. As for aromatics, this division of soap perfuming is a child of the twentieth century and is only coming into its own at present.

In a volume called "Household Manufactures in The United States," which discusses various manufacturing methods in this

country from 1640 to 1860, the making of soap is described in detail. Soft soap was made by mixing old grease accumulated during the year, with lye obtained by leaching wood ashes. An article on soap making as it was carried on over a century ago contains details about the crude household processes then in vogue. This article, by Janet MacFarlane of The Farmer's Museum, Cooperstown, N. Y., also quotes some "Never Failing Recipes" for soap which had been published in *The American Agriculturist* in 1845.

So astonishing has been the progress in soap manufacture in the last ten years that we are often unaware of the fact that less than a century ago the status of soap making was in about the same condition of development as artificial illumination before the discovery of kerosene. It is good to know that Benjamin Franklin, who had so much to do with the growth of this country both in a cultural and in a material sense, started life as a 'sope-maker', a breed of men whose activities help to make the world and its people clean and bright and comfortable, and who have stimulated the progress in many allied and related industries such as the chemical industry, the advertising industry, the paper industry, the textile industry and the perfume industry. May their shadow never grow less!

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Detergent Screening Tests

In the absence of a commercially available "natural dirt" soiled cloth it is far better for each individual laboratory to develop its own to avoid the hazard of erroneous conclusions from "artificial" soils.

By Robert C. Ferris and Lester O. Leenerts*

Research Laboratory,
Purex Corp., South Gate, Calif.

ALTHOUGH the final analysis of the laundry performance of a detergent composition is ultimately determined in a practical washing machine type of test using family bundles in a laboratory or through some type of consumer testing panel in the home, dependable methods for screening such a formulation in the laboratory are a necessity. Among the many problems of designing such screening tests is that of producing a standard soiled cloth which will give reproducible results. Further, screening tests should be as enlightening as possible and, therefore, have, as nearly as practically attainable, some expected correlation with the final tests on naturally soiled laundry.

The most common commercially available standard soiled fabrics are prepared by the impregnation of an Indian Head type cotton cloth with carbon black suspended in a liquid medium. In some cases the carbon black is deposited on the cloth along with an oily substance while in others an aqueous suspension is used. All of the cloths using carbon black as the "darkening agent" are used in detergency evaluation by reading their reflectance values before and after wash-

ing tests. Although there is generally a fairly wide acceptance of such soiled cloths, difficulty still arises in drawing final conclusions on the performance of detergents using only such soils. In one paper by Diehl and Crow (1), for example, four different fabrics artificially soiled with carbon black were used to test four commercially available detergent compositions, with variable conclusions.

The use of a more natural type of soil for standard test fabrics has not been completely ignored. In one paper by Sanders and Lambert (14) there is reported a study in which natural dirt was analyzed and these were reproduced as closely as possible in preparing a standard soiled cloth which was not dependent upon carbon black as the principal darkening agent. We have found in our laboratories that the use of a soiled cloth prepared from natural dirt, in addition to the carbon black type soil, is a necessity in obtaining detergency screening test data of any real value. We have followed a somewhat simpler approach than the synthesis of such a soil as reported by Sanders and Lambert and obtain this material from vacuum cleaners sweepings; however, our so-called "Purex" dry soil cloth is probably quite representative of the

natural soil referred to in this paper.

Experimental

THE following procedure is used in our laboratory for the preparation of the "Purex" dry soil cloth: Desize approximately eighty 10½" x 10½" swatches of Nashua Indian Head cotton cloth by washing in an automatic agitator type washer using a three percent sodium tripolyphosphate solution in tap water at 110°F. The deep rinse cycle should be repeated at least four times. Dry the swatches in an automatic dryer.

Preparation of Soiling Solution: Screen vacuum cleaner dirt (secured from a downtown Los Angeles hotel) through a 40 mesh Hunter "Lightning" sifter. This material should then be passed through an 80 mesh screen on a "RO-TAP" or similar equipment. (Thoroughly mix all of the soil and store in an air tight container.) Add 400 grams of the 80 mesh soil to five gallons cold de-ionized water (50 ppm hardness or less) in a standard non-automatic agitator washer. Agitate the solution for twenty minutes.

Soiling of Swatches: After the soiling solution has been agitated for the prescribed twenty minutes, add 80 of the desized

* Paper presented before the 42nd midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 21, 1956.

swatches and agitate for five minutes. Stop the agitation and drain the machine. Add 10 gallons deionized water and agitate the solution for fifteen seconds. Handling each swatch individually, dip in the rinse water a sufficient number of times to remove the surface soil. Run the swatches through the wringer, being careful not to form creases in the cloth. Dry the swatches for at least two hours in an automatic dryer at "hot" temperature (180-190°F).

Selection of Swatches for Detergency Testing: Using a Photovolt Reflectometer 610-B with a 610-D scanning unit the following grading of swatches should be made:

1. If the unsoiled reflectance was 80.0 to 82.0 (MgO as 100) retain only those swatches which have a Tri-green reflectance in the range of 53.0 to 55.0.
2. If the unsoiled reflectance was 82.5 to 84.5 retain only those swatches which have a Tri-green reflectance in the range of 55.5 to 57.5.

The graded swatches should be stored in an air-tight container.

Apparatus

1. Tergotometer.
2. Photovolt Reflectometer Model 610-B with a scanning unit 610-D.

Materials

1. Greasy type soiled cloth (ACH #114—reflectance approximately 25.0) cut into 3¼" x 3¼" swatches.
2. Dry soil cloth prepared as indicated above cut into 3¼" x 3¼" swatches.
3. Synthetic hard water comprising two parts CaCl₂·2H₂O and one part MgSO₄·7H₂O (technical grade materials), expressed in ppm as CaCO₃.

Washing Procedure

1. Adjust the constant temperature bath of the Tergotometer to 110°F.
2. Transfer one liter of the de-

tergent test solution into the stainless steel washing vessels and place in the machine.

3. Insert the agitators and adjust the speed to 90 CPM.
4. Read the reflectance of the test swatches, placing three like pieces under the one being read to provide a uniform background.
5. Place four greasy type and four dry soil type swatches in each detergent solution and set timer for a 20 minute washing cycle.
6. At the end of the cycle remove the swatches and rinse at least three times by hand in cold tap water.
7. Dry the swatches in an automatic dryer at the "hot" (180-190°F.) setting.
8. Read the reflectance of the washed swatches.

Calculations

The soil removal is calculated using the formula:

$$\% \text{ Soil Removed} = \frac{R_u - R_s}{R_u - R_w} \times 100$$

R_u —reflectance of the unsoiled cloth
 R_s —reflectance of the soiled cloth
 R_w —reflectance of the washed cloth

Discussion of Results

TO demonstrate the type of misleading data that may be obtained using only carbon type soil, and to indicate the additional information gained through the use of our dry soil, we have chosen the four types of composition listed below:

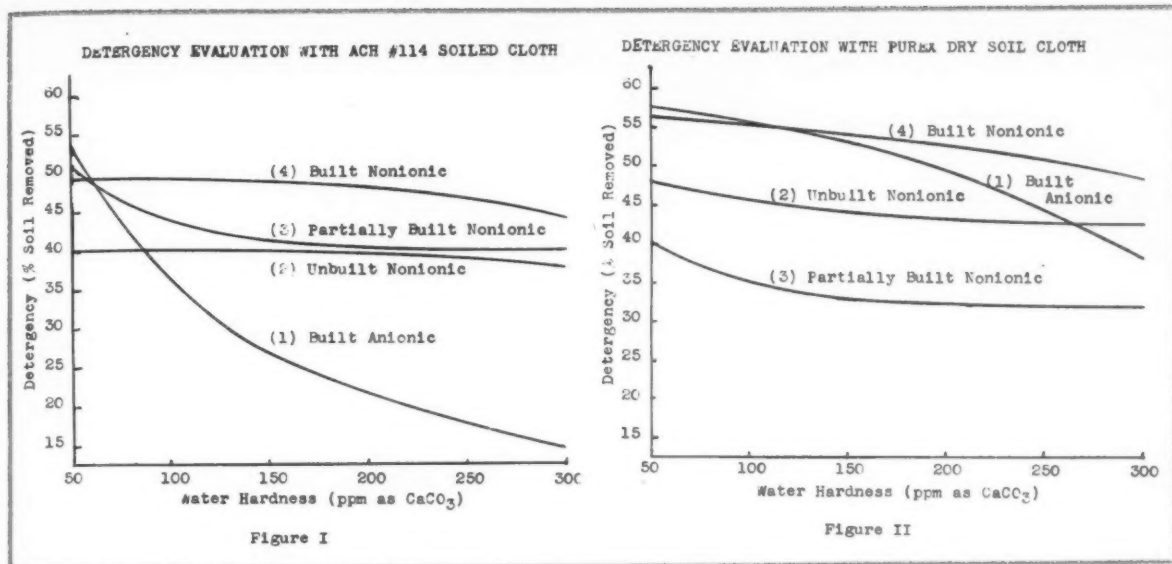
1. A built anionic detergent containing approximately eight percent alkyl aryl sulfonate, 15 percent alcohol sulfate, 50 percent polyphosphates, carboxymethylcellulose and the other usual additives.
2. An un-built non-ionic composition consisting solely of 19 percent of an alkyl phenol ethylene oxide condensate.

3. A "partially built" non-ionic composition containing an alkyl phenol polyglycol ether and polyphosphate in the ratio of approximately 1 to 2.
4. A built non-ionic composition in which the ratio of surfactant to polyphosphate is approximately 1 to 4.

IN Figure I, we show the detergency as percent soil removal plotted against the water hardness as ppm CaCO₃ for each of these compositions when using American Conditioning House's "ACH 114" soiled cloth. One would naturally conclude from these data that any of the non-ionic compositions have good performance when compared with the built anionic. The un-built non-ionic is deficient only at hardnesses below approximately 80 ppm. The small amount of phosphate in composition Number 3 overcomes this deficiency and in the completely built non-ionic formulation the performance seems to be outstandingly superior to the anionic product. Since the type of anionic formulation used in these studies is one which has met with considerable consumer acceptance, it would seem safe to conclude that any of the non-ionic formulations tested would be worthy of market testing or at least further consumer testing.

These data are now supplemented with those plotted in Figure II. As can be seen, the superiority of the non-ionic compositions suddenly disappears except in the case of Composition 4 and even there a marked improvement in detergency is noted only when the hardness of the water is relatively high. One would not conclude from these additional data that compositions 2 and 3 could be expected to pass "practical washing machine" or "consumer tests" as was indicated by the data of Figure I.

An additional arbitrary method of viewing these data is to plot what we have called a "composite detergency" calculated by adding together the soil removal values ob-



tained with the ACH soiled cloth and the Purex dry soil cloth and dividing this figure by two. Treated in this manner these same data are plotted in Figure III. The conclusions which might be drawn from Figure III should, we feel, be tempered with the realization of the wide difference in performance obtained from these compositions with these two types of soils. We are further guided in our laboratories

by the opinion that, although carbon black soiled clothes have the property of reproducibility and can be fairly well defined chemically, they are a rather poor representation of any soiling that might be expected to occur on cotton fabric under natural conditions. Our dry soil, on the other hand, although perhaps grossly exaggerated in quantity, could be considered as a natural dirt and, therefore, more nearly

representative of the kind of soil that the average housewife might be required to remove from time to time.

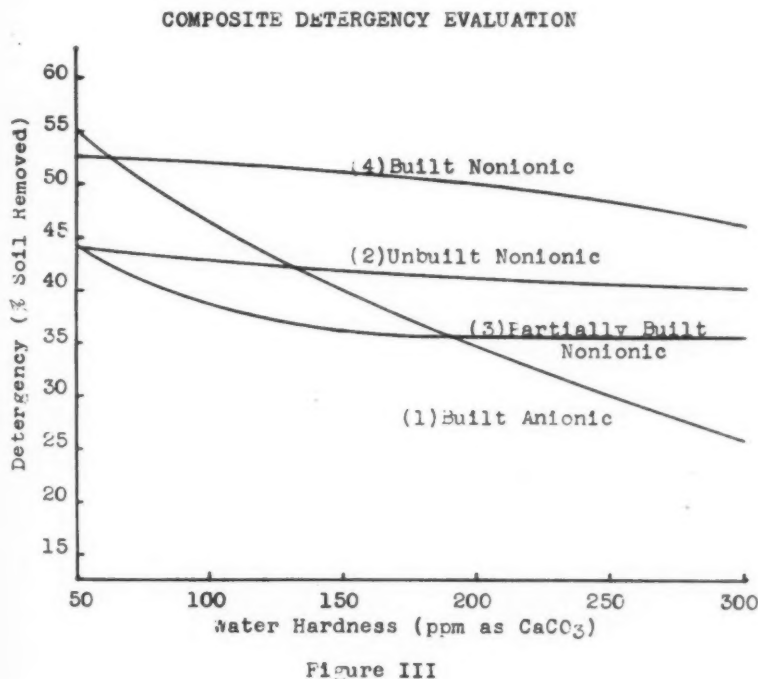
Conclusion

IN summary, one must conclude that laboratory detergency tests should not be subjected to extrapolation beyond the purpose of screening. Furthermore, to sacrifice the meaningfulness of tests which can be conducted on soils of natural derivation for the advantages of: (1) "standardization," (2) perhaps better reproducibility and (3) knowledge of the soil's chemical content, leads to the possibility of grave errors in conclusions sought from such screening tests. In the absence of a commercially available "natural dirt" soiled cloth it is far better for each individual laboratory to develop for its own use such a type so that the hazard of erroneous conclusions from "artificial" soils can be avoided.

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Switch to selling housewives hits

Milner Products'

Howard S. Cohoon, president of Milner Products Co.

FROM a concern that had three employees in its office, while the factory was hand bottling and labeling its products, to the world's largest users of pine oil in less than eight years is the success story of the Milner Prod-

ucts Company of Jackson, Mississippi, manufacturers of "Pine-Sol," a disinfectant and cleanser, and "Perma-Starch," a plastic, liquid, permanent-type starch.

One of the main reasons for this phenomenal change was the fact

that whereas "Pine-Sol," in 1948 was sold mainly to janitorial supply houses, today it is a household item for cleansing disinfecting, deodorizing, as well as for use in the laundry, with statistics showing that one out of every three and one half homes in the U. S. A. use this product.

It all began when Dumas Milner, a Mississippi industrialist, acquired Magnolia Chemical Company in 1948. It had one product—"Pine-Sol"—with limited distribution. The firm had 800 square feet of space and its volume amounted to about \$77,000. Convinced that in proper hands it could be developed into a highly successful business, Mr. Milner acquired the services of Howard S. Cohoon, an expert in sales promotion, who came to the company as executive vice president. The firm's name at this time was changed to the Milner Products Company.

In the next eight years the company rose from obscurity to a position of national prominence throughout the 48 states and seventeen foreign countries. With a firm belief in "Pine-Sol's" outstanding qualities for the home, Mr. Cohoon went out into the field himself. His first sale outside of Mississippi was in Birmingham, Alabama. The first chain store to get on the band wagon was the A & P. Soon distribu-

Surrounded by "walls" of cartons of "Pine-Sol" in one of the company warehouses are Howard S. Cohoon, president, left, and R. E. Schuler, general sales manager of Milner Products Co., right.



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"Pine-Sol"

tion spread through Florida, Arkansas, and gradually, the entire country. Last year's sales figures were approximately six million dollars. Today the company occupies 25,000 square feet in their Jackson plant alone. There are more than 80 brokers, with a sales personnel numbering 600. A fleet of trailer trucks services 85 warehouses at strategic points throughout the country.

It is estimated that approximately 30,000,000 bottles of "Pine-Sol" have been sold from January 1949 through 1955. Milner Prod-



Mr. Cohoon looks over a mass display of "Pine-Sol" set up in a grocery supermarket. Success in selling this type of outlet boosted sales.

ucts is the largest user of pine oil in the world.

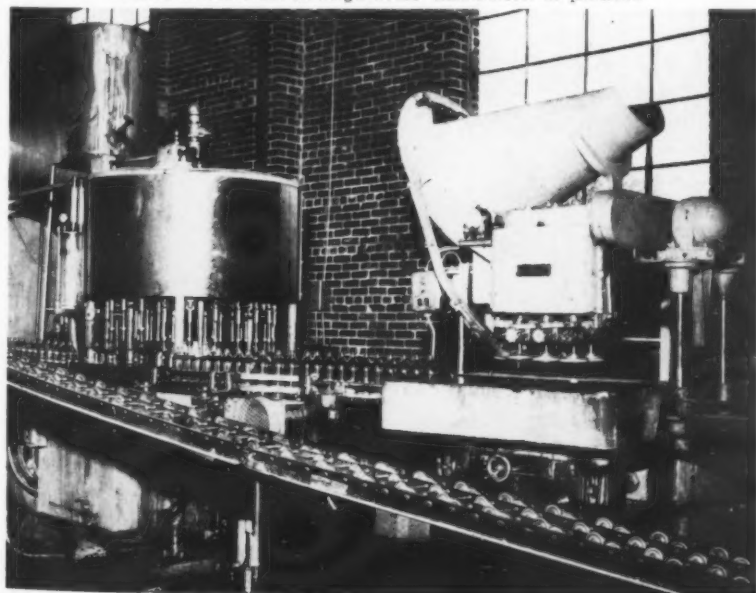
The company is also the lead-

ing producer of plastic, permanent liquid starch; having first acquired its "Perma Starch" operations at the beginning of 1955. Perma Starch is produced at the company's facilities at Illiopolis, Illinois.

Dollar sales volume on this permanent-type starch in 1955 was about \$4,200,000; a sales rise of 107 per cent in this first year that it was handled by Milner Products. More than 6,000,000 pint bottles were sold in nationwide distribution.

This product has advantages over the traditional starch products: not only making the starching function more convenient but lasting through repeated launderings, perhaps as many as 15 washings. Thus, it eliminates the need for starching each time a garment or fabric is laundered. The liquid product contains tiny plastic particles which penetrate and grip the individual thread fibers of a fabric, holding them together and minimizing wear and tear.

Latest type filling and capping machine at Milner Products Co. plant in Jackson, Miss., is essential in large scale distribution of product.





Approximately 30 million bottles of "Pine-Sol" have been sold from January, 1949, through 1955 by Milner Products Co.

Howard S. Cohoon, since elected president of Milner Products' was born in Spencer County, Ind., in 1903, the son of Mr. and Mrs. M. F. Cohoon, also natives of Spencer County. The elder Mr. Cohoon was a cattle buyer for the Bourbon Commission Co. of Evansville, Indiana.

Young Howard attended grammar and high school in Spencer County and distinguished himself as a baseball player. Although his formal education ended with high school, he continued to study management, sales and advertising on his own.

His first job was as a salesman for Gold Dust Corp. From 1931 to 1934 he served in the same capacity for General Foods Sales Co. At this time he joined the Iowa Soap Company of Burlington, Iowa, where he remained for the next ten years, holding such positions as district manager, divisional manager and sales promotion manager. In 1943, he went with the Linco Corporation of Chicago, as general sales manager.

It was in 1948 that he joined Milner Products Co., then known as Magnolia Chemical Co. It was a

janitorial supply house with three employees in the office-factory, turning out a pine-oil disinfectant sold mainly in Mississippi. Bottling and labeling were done by hand.

Married to Katherine Murray of Cairo, Ill., the Cohoons have two children, Howard, 32 and Janet Ruth, 22. Active in the civic, business and social circles of his community, Howard Cohoon is a member of the Civitan International, Petroleum Club and the Colony Country Club. His hobbies are baseball and golf.

There are about 43 different uses for "Pine-Sol" in the home and new ones are constantly being discovered. Housewives often write in to tell for what new purposes they are using it. Recently an ingredient known as "Ko-Cal" was added to it, making it desirable for uses in the laundry, as well, for it whitens and brightens clothes.

The interest shown by consuming housewives in sending in new uses for "Pine-Sol" and "Perma Starch" prompted Mr. Cohoon to organize and sponsor the "Mrs. Homemaker's Forum." The "Forum" serves as a public service medium for the interchange and dissemination of household hints to lighten the homemaker's chores. Housewives are invited to send in hints—not necessarily pertaining to the firm's products—the best of which win weekly cash awards and qualify for subsequent greater awards. These include 40 free one-week vacation trips for two at exclusive Ellinor Village in Florida.

Mrs. Homemaker's Forum is directed by Miss Lou Payne, a television entertainer and home economist. A TV show relative to the "Forum" is sponsored by Milner Products, and emanates out of Chicago. In addition, the better suggestions are sent via a mat service in column form to 2,700 newspapers throughout the country. The column is also available to chain and independent stores for incorporation in their own advertisements.

Needless to say, the "Mrs.

Homemaker's Forum" has proved fruitful to Milner Products as a promotional device. For 1956, Milner Products has earmarked more than \$1,000,000 in an expanded advertising and sales promotion; a major theme of which will be directed to consumer education on these still relatively new and rapidly expanding products.

Pine oil with its pleasant odor, plus other properties makes it a disinfectant useful for schools, hotels, hospitals, theatres, and the like—as well as for stables, chicken coops—or for washing pets.

Before the turn of the century, pine oil was virtually unknown. In 1909, Homer T. Yaryan built at Gulfport, Mississippi, the first commercially successful plant to recover pine oil from stumps. That plant founded a new industry, utilizing vast acreages of stump-lands left behind by loggers in the South.

At first there were none but industrial uses for pine oil such as flotation of copper in mining. Now the product has moved into the home, for cleaning, disinfecting, and deodorizing. Today laundries, tex-

Added to the Milner line in 1955 was "Perma Starch." Sales of the product were upped 107 percent in first year Milner sold "Perma Starch."



tile processors, and rug cleaning establishments also use it. It goes into paints, varnishes, inks, adhesives, insecticides, mosquito repellents, cattle sprays and even into ointments for treating sprains and insect bites. It is also said to kill many of the organisms that transmit contagious diseases. Derivatives are used as perfume and cosmetic bases.

Perhaps the first international use of pine oil as a disinfectant was during the Second World War. Manufacturers were puzzled at first when enormous quantities were ordered sent to England by the government. England was suffering the worst of the German bombing at that time and found sanitation in her cities an enormous job. The use of pine oil as a disinfectant proved a valuable ally in this fight against disease.

In the year ending March 31, 1956, the industry produced 9,350,500 gallons of pine oil in Mississippi, Florida, Georgia, Alabama, and Louisiana. It is estimated that the business of treating stumps for their pine oil and other by-products grosses more than \$600,000,000 each year.

Now one of the South's largest industries, Milner Products Company takes a large share of the credit for this change. Milner with its all-out promotion was responsible for the gains during the last few years in the use of pine oil products in homes.

New Gross Oleic Acid

A new oleic acid, claimed to exhibit very good stability characteristics, was introduced recently by A. Gross & Co., New York. "Groco 5L" is described as a premium oleic acid of light color and low linoleic acid content, with resulting stability and resistance to oxidation. The product comes with linoleic content well under the established maximum of 3.5 percent, titer under 5°C and iodine value of 86 maximum, according to Eugene W. Adams, Gross vice-president, who made the announcement. Full specifications and other detailed information re-

lating to this new oleic and to the whole line of the firm's fatty acids

and related products are available upon request.

How "Dial" Soap Reached Top

THE long gamut of tests and obstacles which "Dial" soap had to run before it won its present position in the toilet soap field was described by W. R. Forrest, Chicago advertising executive, in a talk at the recent Chicago convention of the United States Wholesale Grocers Association.

First, said Mr. Forrest of the Foote, Cone & Belding agency, two years were spent in intensive research to find the effective anti-bacterial agent with non-toxic qualities which is utilized in this soap. Then came consumer panel testing for size, weight, and shape of bar, for color, perfume, mildness, and satisfaction. Following this the problem of selecting the right name and package design had to be settled.

The burden of a premium price, made necessary by the expensive ingredients, had to be faced, Mr. Forrest said, and still another problem was to overcome an acquired hostility to deodorant soaps. Women, he said, suspect items of harshness and offensive odor and retailers anticipated a lazy turnover. On the odor aspect he revealed that an early test put the "Dial" scent onto a "Dial" ad in the *Chicago Tribune*, through scientific blending of perfume oils and printing ink.

Just at the time "Dial" was ready for introduction, Mr. Forrest went on, food stores, where 90 percent of toilet soap is sold, began exhibiting a strong trend toward reduction of inventory. This factor, plus the higher price and other considerations, he said, led to initial testing in drug and department stores.

There are eight major steps in the life of any name brand food store item, Mr. Forrest said. Included are the product idea, laboratory research, consumer research, preparation of the marketing plan,

development of advertising strategy, development of the merchandising program, market testing and, finally, market expansion.

Distributors who often express wonder at where all the new products come from, were assured by Mr. Forrest that only three or four of every 100 "hatched" ever reach the point of actual presentation at the wholesale level. Marketing expense for launching a new product today, he said, would almost never be less than \$1 million. Not uncommonly it would run to \$10 million or \$20 million and three to ten years would be needed to recover this cost.

But new products, intelligently merchandised, he declared, will bring increased sales and profits. People, today, he noted, are more than ever receptive to the promise of greater convenience and comfort. Consumers, too, have money to spend and *value*, rather than price, is their primary concern.

He paid tribute to the part which trade magazines play in introducing a new product, saying, "We know that you read your own professional journals to keep informed, to learn more about your business. So, in our own trade paper advertising we try always to give you the pertinent information about a product, what we're doing to promote it, suggested merchandising helps for greater profit, special deals, promotions and the like."

Armour & Co's Chicago auxiliaries, including the soap division, were among 33 winners of plaques in the annual commercial vehicle accident prevention contest sponsored by the Greater Chicago Safety Council. Awards are based on comparison of the frequency and severity of their accident experience in 1955 over 1954. Presentation was made at a dinner, May 23.

Soap Industry Census...

1954 Census of Manufactures shows soap and glycerine industry shipments off 13 percent in value from '47. Soap and glycerine only 42 percent of products shipped by soapers.

THE soap and glycerine industry in the United States in 1954 shipped products valued at \$937,000,000 according to the 1954 Census of Manufactures. An advance report on the soap, glycerine and related industries was released by the Bureau of the Census, U. S. Department of Commerce, late last month. This total represents a drop of 13 percent in value of shipments from the \$1,085,798,000 reported in the last census which covered 1947. The \$937 million total includes \$392 million worth of soap, glycerine and other products such as shampoos and shave creams which are primary to the industry, and \$545 million worth of products primary to other industries, e.g., bulk and packaged synthetic detergents, alkaline detergents, dentifrices, hair preparations, and other cosmetic and toilet preparations.

Thus the soap industry's shipments of soap and glycerine

represented only 42 percent of its total manufactured products shipments (primary and secondary). In 1947, 81 percent of the products shipped by soap makers were soap and glycerine. This drop of 39 percentage points primarily reflects the growth of shipments of bulk and packaged synthetic organic detergents by plants manufacturing soap and glycerine.

Total value of soap industry shipments of soap and glycerine in 1954 actually amounted to \$474 millions. The soap and glycerine industry shipped 83 percent of this total. The difference is made up by shipments of producers in other industries who make soap and related items as secondary products.

In spite of the drop in shipments the census shows a rise in the number of establishments in the soap and glycerine industry: 288 in 1954 against 247 in 1947. The number of employees in the soap industry in 1954 dropped eight per-

cent, with the payrolls in that year showing an increase of 33 percent, as compared with 1947. In 1954, the industry employed 25,300 persons receiving \$123,700,000, compared with 27,500 and \$93,200,000 in 1947.

Production workers earned 18 percent more in 1954 than in 1947, with their number down 19 percent and man hours down 29 percent. In 1954, production workers numbered 15,600, working 29,100,000 man hours and receiving \$68,000,000 in wages. This compares with 19,300 production workers in 1947; 41,000,000 man hours, and \$57,400,000 in wages.

Value added by manufacture was 11 percent greater in 1954 than in 1947. Figures are \$497,000,000 for 1954, compared with \$449,800,000 in 1947. Cost of materials, fuel, electricity, and contract work dropped 31 percent and new capital expenditure in the soap and glycer-

(Turn to Page 46)

General Statistics for Industry Groups and Industries: 1954 and 1947
(For explanation of column captions see text)

Industry group and industry	1954									1947	
	All employees		Production workers			Value added by manufacture	Cost of materials etc.	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Number (1,000)	Payroll (Million dollars)	Number (1,000)	Man-hours (Millions)	Wages (Million dollars)	(Million dollars)	(Million dollars)	(Million dollars)	(Million dollars)	(1,000)	(Million dollars)
Soap and related products	46	225	29	53	111	817	(²)	(²)	28	45	607
Soap and glycerine.....	26	125	16	30	70	513	463	976	14	28	450
Cleaning and polishing products	18	85	11	21	35	272	244	516	12	15	137
Sulfonated oils and assistants	3	14	1	3	5	32	40	73	2	2	20
Chemical products, n.e.c.	89	369	60	117	207	1,114	(²)	(²)	67	83	700
Essential oils	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1	14
Toilet preparations	26	97	17	33	51	416	212	628	8	27	232
Insecticides and fungicides	6	25	4	8	13	60	109	169	3	4	25

*The sum of industry totals may not equal the "all industries" or industry group totals, due to independent rounding of detail and total figures. Totals include data for industries which have been withheld from publication in order to permit further checking of data. Additional publishable detail will appear in the final industry bulletins.

²This figure has been omitted because it contains extensive duplication.

Quantity and Value of Soap and Glycerine by all Producers in the U. S.: 1954 and 1947
(Includes quantity and value of these products reported both by establishments classified in the Soap and Glycerine Industry, and by establishments making these items as "secondary" products in other industries)

Product	Unit of quantity	Total shipments including interplant transfer 1954		1947	
		Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
Soap and glycerine, total .....	.....	xxx	473,983	xxx	*956,499
Soaps, except specialty, packaged ² .....	.....	xxx	300,927	xxx	705,888
Bars (excluding mechanics hand soaps and shaving soaps):					
Toilet, including medical and medicated ³	Thousand pounds.....	516,435	145,084	*561,081	*190,968
Laundry and household:					
White (made with not more than 10 percent resin)	do	184,976	32,135	407,694	87,418
Yellow (made with more than 10 percent resin)	do	97,664	10,666	356,281	43,524
Other (including industrial)	do	42,514	3,699	27,209	4,569
Chips and flakes	do	74,916	22,008	230,720	67,224
Granulated, powdered and sprayed ⁴	do	366,003	78,277	1,391,116	279,994
Washing powder ⁵	do	12,465	1,005	80,478	5,909
Liquid (potash and other, excluding shampoos)	Thousand gallons.....	1,860	2,552	2,221	2,180
Paste and jelly (potash and other, excluding mechanics, hand paste)	Thousand pounds.....	9,694	1,339	12,043	1,680
Scouring cleansers containing abrasives, made with soap	do	25,105	1,683	265,723	22,422
Other soaps .....	.....	xxx	1,055	xxx	(⁶)
Soaps, except specialty packaged, not specified by kind .....	.....	xxx	1,424	xxx	(⁶)
Soaps, except specialty, bulk ⁷ .....	.....	xxx	48,986	xxx	101,781
Chips and flakes	Thousand pounds.....	124,215	12,551	195,934	39,576
Granulated, powdered, and sprayed ²	do	133,023	12,926	131,679	21,449
* Washing powder ⁸	do	35,679	2,764	103,859	6,258
Liquid (potash and other, excluding shampoos)	Thousand gallons.....	11,588	12,142	14,247	10,447
Paste and jelly (potash and other, excluding mechanics; hand paste)	Thousand pounds.....	34,021	3,300	31,825	4,557
Scouring cleansers containing abrasives, made with soap (25 lbs. and over)	do	10,324	943	77,109	6,253
Other soaps (when in individual con- tainers of more than 25 lbs.) .....	.....	xxx	1,179	xxx	*1013,241
Soaps, except specialty, bulk, not specified by kind .....	.....	xxx	3,183	xxx	(⁶)
Specialty soaps .....	.....	xxx	42,950	xxx	26,841
Mechanics' hand soaps and pastes, made with soap	Thousand pounds.....	60,945	12,746	50,445	6,384
Shaving preparations, soap or soap base:					
Lather cream:					
Tube and jar	do	5,532	6,799	(NA)	*10,027
Aerosols	do	18,167	17,434	(NA)	(NA)
Stick, powder, or cake	do	4,239	2,916	(NA)	5,405
Other specialty soaps .....	.....	...	...	xxx	5,025
Specialty soaps, not specified by kind .....	.....	xxx	3,055	xxx	(⁶)
Glycerine .....	.....	xxx	75,809	xxx	88,576
Crude 100 percent basis .....	.....	58,496	14,199	40,997	16,222
High-gravity, dynamite, and yellow distilled, 100 percent basis	Thousand pounds..... do	60,435	18,179	81,588	34,211
Chemically pure, 100 percent basis	do	145,956	43,431	92,220	38,143
Soap products, not specified by kind .....	.....	xxx	5,311	xxx	33,413

*Revised. ... Represents zero. xxx Not applicable. NA Not available.

¹Of this total value, 83 percent was shipped by plants classified in the Soap and Glycerine Industry; the remainder was shipped as "secondary" products classified in other industries.

²Packaged soaps are limited to products packed in individual containers of less than 25 pounds; and for liquids, when in individual containers of less than 1 gallon. ³Bars weighing less than two pounds.

⁴Includes 5,630,000 pounds of medical and medicated soap, valued at \$3,144,000 reported and published separately in 1947.

⁵Containing more than 25 percent anhydrous soap. ⁶Containing 25 percent or less anhydrous soap. ⁷Included in total for "Other Soaps", bulk.

⁸Included in soap products, not specified by kind.

⁹Bulk soaps are limited to products packed in individual containers of 25 or more pounds; and for liquids, when in individual containers of 1 gallon or more.

¹⁰Includes unspecified amount of packaged soap, classified as "Other Soaps", and excludes \$1,505,000 reclassified as shaving creams, tube & jar.

¹¹Revised, includes \$1,505,000 transferred from "Other Soaps".

ine industry was down 45 percent.

The general statistics for industry groups and industries include figures for domestic laundry equipment. Total shipments by this industry in 1954 were valued at \$521,000,000, with value added by manufacture at \$204,000,000 and number of employees 22,000. This compares with value added of \$161,000,000 by 29,000 employees in 1947. In this connection it is interesting to note that value added in the laundry and dry-cleaning equipment industry remained at \$54,000,000 with number of employees in 1954 at 7,000 and in 1947 at 9,000.

The overall census shows a 13 percent increase of employment over 1947 but a six percent drop from 1953. Value added by manufacture dropped five percent from the estimate compiled in 1953 while reflecting a 56 percent rise in dollar value over the 1947 census.

The 1954 Census of Manufactures is the 26th such census of the United States since 1809. Present legislation provides for a Census of Manufactures every five years with the next one scheduled to cover 1958. The advance report (MC-28-4.1) on the soap and glycerine industry, classified as Industry 2841, is available for 10 cents from the Bureau of the Census, Washington 25, D. C. Another bulletin is in preparation which will cover soap; glycerine; polishing and related products. It will be for sale by the Superintendent of Documents as Census Bulletin, MC128D.

The 13-page publication entitled "Preliminary Report, 1954 Census of Manufactures, General Statistics for the United States by Industry Group and Industry," MC-G-1, can be ordered from the Census Bureau for 20 cents.

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Cosmetics in Egypt

George R. Hughes, associate director of Egyptology at the University of Chicago, was the featured speaker at the Ladies Night meeting of the Chicago Chapter of the Society of Cosmetic Chemists, June

12. Dr. Hughes' subject was: "The Cosmetic Arts in Ancient Egypt."

Fabric Washing Studies

(From Page 32)

rather wide-range has no significant effect on the percentage of soil removal by a given detergent, the results may be simply expressed as percent soil removal.

A fascinating piece of work that I believe could have been done in no other way has been reported by the National Institute of Dry-cleaning. The removal of sugar from wool was studied by using radioactive sugar. This method doesn't use up the sample as do many of the usual analytical techniques so the same swatch could be cleaned over and over again, and the gradual removal of sugar easily followed. It is obvious that for such soils, reflectance measurements are not the answer.

Although radioactivity and atomic energy are closely linked, you should not be dismayed by thoughts of hazards or gross outlay for equipment or facilities. Swatches already soiled with a variety of radioactive soils may be purchased in reasonable size lots, without restriction, from one of the larger radioactive equipment companies. These may be used by relatively untrained personnel without any special safety precautions. Instrumentation would cost about a thousand dollars for a simple set-up.

A wide variety of tagged chemicals can also be bought without restriction, in small quantities, which are yet large enough for productive research. For a more elaborate program using large quantities of radioisotopes, certain requirements of the Atomic Energy Commission must be fulfilled as to training and experience of personnel and the extent of equipment and safety precautions. These regulations are designed for your protection, and should be considered as constructive help and not simply as limitations.

I hope that this attempt to

outline a few of the possible uses of radioisotopes in the field of detergency has served to illustrate the tremendous potential value of this technique and will suggest to you possible approaches to your more specific problems. Remember, radioactive dirt can't hide.

Clarence D. Tuer Dies

Clarence D. Tuer of Port Huron Detergent Co., Mich., died May 25. He was president and general manager of the firm.

Antibacterial Handcleaner

"Speed-Kleen," a new lanolized antiseptic handcleaner, was introduced recently by Landon Laboratories, Kansas City, Mo. The bacteriostatic agent is "Actamer," made by Monsanto Chemical Co., St. Louis. "Speed-Kleen" is said to remove difficult stains such as paint, printers ink, carbon, grease, etc. without hard rubbing or scrubbing action. Landon says the product is 100 percent active cleaner, mild to the skin and rapid in cleaning action.

Detergent Screening Tests

(From Page 39)

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You'll like everything about Columbia-Southern **SODA ASH**

For over half a century, Columbia-Southern has been supplying quality soda ash to American industry.

However, in addition to the high quality of product, such things as raw material supply, plant facilities, location, service and personnel of Columbia-Southern are also important to you as a soda ash user.

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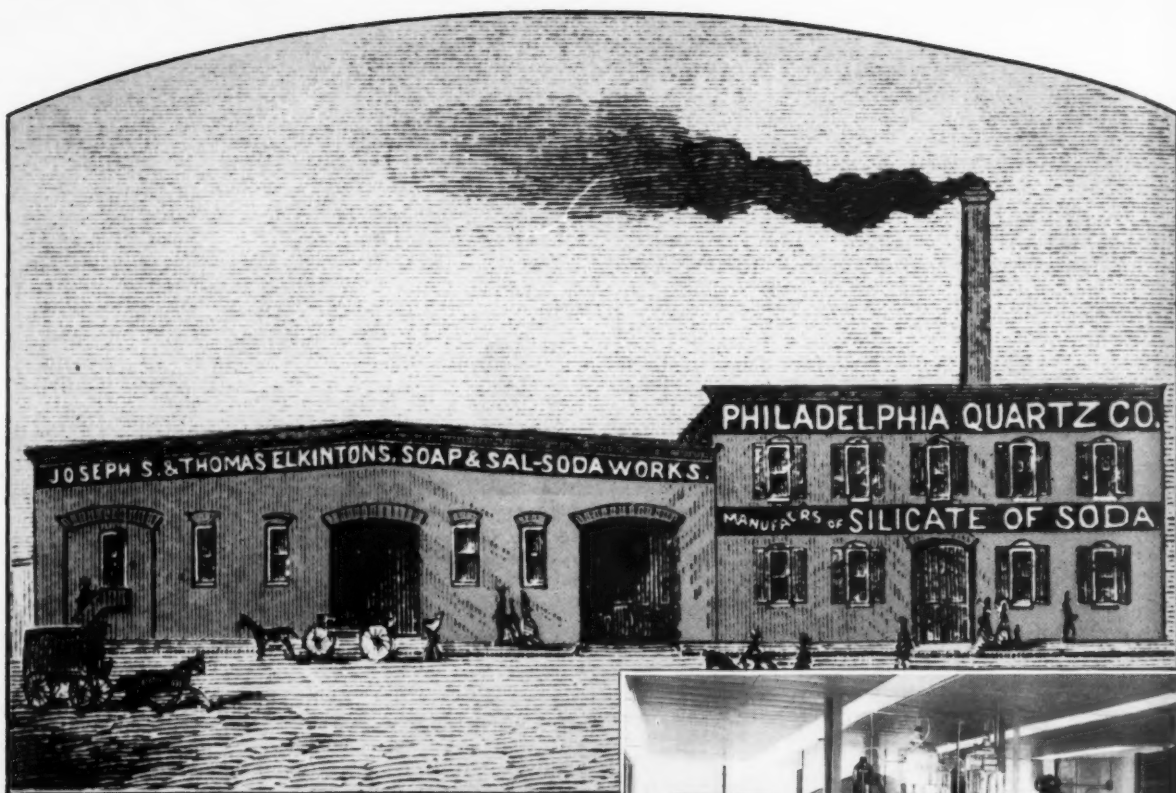
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	METSO DETERGENTS

PQ WORKS: ANDERSON, IND., BALTIMORE, MD., BUFFALO, N. Y. CHESTER, PA., JEFFERSONVILLE, IND., KANSAS CITY, KANS., RAHWAY, N. J., ST. LOUIS, MO., UTICA, ILL.

News

Beach Names Thomas

Beach Soap Co., Lawrence, Mass., recently announced appointment of William J. Thomas as sales



William J. Thomas

representative in the Philadelphia area. Having completed the firm's course in commercial and institutional laundering, Mr. Thomas will render technical service on wash-room problems. He will sell and service the Beach line of wash-room supplies.

Breck Expands in N. Y.

The New York sales office of John H. Breck, Inc., Springfield, Mass., located at 5 East 57th Street, and the beauty salon, housed in the same building, are being enlarged, it was announced recently. Breck has taken additional space on the seventh floor which the sales office will occupy. The sales office's former quarters on the ninth floor will be used for additional facilities for the beauty salon. The latter is scheduled to close from Aug. 6 through 18 when it will get ready to move.

SBS Skin Cleaner Film

Sugar Beet Products Co., Saginaw, Mich., recently announced a 23 minute educational sound and color film on industrial skin cleaning. Entitled "The Washword of

Industry," the 16 mm film tells about the manufacture, use and buying aspects of powdered and waterless skin cleansers. The film is offered to various associations concerned with safety, hygiene, purchasing and maintenance, and to foremen and employee groups for in-plant showings. Each of the firm's sales representatives has a copy available for showing and will provide projection facilities for interested groups. Interested parties should write the editor of the *SBS Counselor*, house organ of the firm.

Meyer Simkin Dies

Meyer Simkin, 61, president of S. & H. Soap and Chemical Co., Cincinnati, died May 8 after a short illness. He had been president of the firm for over 15 years. Mr. Simkin is survived by his widow, one son and two daughters.

East Coast Soap List

A new catalog was published last month by East Coast Soap Corp., 89 Coffey Street, Brooklyn, N. Y. The 1956 edition lists the firm's whole line of soap powders, detergents and liquid cleaners. It is available free to all distributors.

Cecil H. Gamble Dies

Cecil H. Gamble, 72, former director of Procter & Gamble Co., Cincinnati, died June 19 at his home in Pasadena, Calif. He was a grandson of James Gamble, co-founder with William Cooper Procter of the firm which became P&G. Cecil Gamble was with the firm from 1906 to 1917, and served two years as secretary of the company. He became a director in 1920 and remained on the board until March of this year when he resigned. His place on the board was taken over by his son David G. Gamble.

Mr. Gamble is survived by his widow, three daughters, three sons and 17 grandchildren.

Join E. F. Drew & Co. Staff

Appointment of Peter P. Bouroff as chemical division manager was announced last month by



Peter P. Bouroff

E. F. Drew & Co., New York. Dr. Bouroff is in charge of production for the laundry, detergent, textile, leather, power chemical, automotive, oil and chemical divisions of the company. Prior to joining Drew he served as plant manager of American Alcolac Corp., Baltimore. Dr. Bouroff is a graduate of the Sorbonne. He has specialized in the development, engineering and production of synthetic detergents.

Bert W. Ahrens also joined Drew last month as technical sales representative of the technical products division. Prior to going with Drew Mr. Ahrens was associated with Apex Chemical Co., Newark, N. J., for 13 years.

Babb on Bank Board

Jervis J. Babb, chairman of Lever Brothers Co., New York, was elected to the board of trustees of the Dry Dock Savings Bank, it was announced last month by Thurman Lee, the bank's president. Mr. Babb is chairman of the business-education committee of the Committee for Economic Development and a director of the National Industrial Conference Board.



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Heads Wyandotte Branch

The appointment of Dr. J. William Zabor as director of research for Wyandotte Chemicals



Dr. J. William Zabor

Corp., Wyandotte, Mich., was announced recently by Frank B. Wolcott, vice-president and general manager of the firm's research and engineering division.

Dr. Zabor, formerly for eleven years, was with Pittsburgh Coke and Chemical Co., Pittsburgh, Pa., where he successively held the positions of director of research, activated carbon division; director of research and development for the company, and assistant to the vice-president, chemicals division.

A native of Cleveland, O., Dr. Zabor received his doctorate from the University of Rochester in 1940. He was an instructor in chemistry at Williams College and later served with the National Defense Research Committee. A scientific consultant for the U. S. Army with assignments in Australia and New Guinea during World War II, he received the Presidential Certificate of Merit for his work.

To van Ameringen Board

Chester F. Smith, formerly president of Esso Standard Oil Co., New York, and a director of Standard Oil Co. (New Jersey), has been elected to the board of directors of van Ameringen-Haebler, Inc., New York, it was announced recently by Charles P. Walker, pres-

ident. Mr. Smith has also served as vice-president and a member of the executive committee of Standard Oil Co. of New Jersey. Long active in the American Petroleum Institute, he served as vice-president of the Refining Division in 1949 and 1950.

New Stanley Cleaner

A new liquid cleaner for all types of floors recently was introduced by John T. Stanley Co., New York, manufacturer of soap products for the past 91 years. Called "Brite-Glo," it is a neutral cleaner and has a sassafras aroma. Said to be high-sudsing, "Brite-Glo" is designed for use on linoleum, wood, marble, terrazzo, asphalt and rubber tile, and vinyl floors. The amber-colored liquid cleaner comes in one and five gallon containers and 55-gallon drums. It is available under either private label or the Stanley trade name. Free samples and further information may be obtained on request to John T. Stanley Co., 642 W. 30th St., New York.

Houghton Advances Menin

Bernard Menin has been appointed manager of the textile sales department of E. F. Houghton & Co., Philadelphia manufacturers of surface active agents and other specialties. Mr. Menin, former assistant manager of the department, succeeds C. B. Kinney who retired in March after 25 years with the company. Mr. Menin joined Houghton in 1941.

Shattuck to New York

Monsanto Chemical Co., St. Louis, Mo., recently announced the transfer of Harold F. Shattuck to the New York sales office of the organic chemicals division as eastern technical manager of the division. In his new post Mr. Shattuck will advise and aid eastern sales representatives on matters relating to the chemistry of Monsanto's products and the broadening of the firm's contacts among major eastern companies.

Gribou Heads Dragoco Div.

Henry G. Gribou has been named by Dragoco, Inc., Holzminden, Germany, vice-president and



Carl H. Gerberding

general manager of its newly established, United States division, at 432 Fourth Ave., New York 16, N. Y., it was announced recently. The new organization is a wholly owned subsidiary of Gerberding & Co., Holzminden and its auxiliary, Heinrich Baensel of Pirna. Before joining the German aromatics and perfume specialties house Dr. Gribou was associated with Lever Brothers Co. of Canada and with Colgate-Palmolive Co., New York.

Dragoco was founded in 1919 by C. W. Gerberding, now chairman of the board. President of the company is his son, Carl H. Gerberding; another son, Horst Gerberding, is director of the perfumery division.

Lueders Honors Veterans

George Lueders & Co., New York, recently honored William Feger and James McKnight, who are celebrating their fiftieth year with the company. A dinner-dance was held at the Astor Hotel which was attended by the entire Lueders staff, including branch managers from San Francisco, Chicago, and Montreal. The two guests of honor received wrist watches and diamond studded pins which were presented by F. J. Lueders, president of the firm. Lueders Fifty Years Club now has 11 members.



Keeping the business end of a hull in business!

Every craft, from a roaring speedboat to the lazy family canoe, is only as seaworthy as the thin "skin" of finish that shields it. And this vital "skin" has to be tough to provide active protection from water, wind, weather!

Superior resins produced through the use of Olefins are greatly responsible for modern rugged finishes. Olefins are members of Atlantic's petrochemical family; that's why you see the oil refinery in the picture.

Olefins are used in production of quality resins for heavy-duty varnishes. They offer faster drying, increased durability against wear and erosion. Typical applications of resins include industrial

flooring, bowling alleys, boats. Olefins are also being used profitably in the manufacture of rubber chemicals, germicides, insecticides, dyes and surface active agents.

Your own business may have use for these or any one of a wide variety of Atlantic petrochemicals. Our sales engineers will gladly work with you in putting any of these chemicals to work in order to improve your present product, develop new products or to speed production—with cost-cutting savings as the result.

For full information, write or wire The Atlantic Refining Company, Dept. E-7, at the nearest office listed.

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In Europe:

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Atlantic Refining Company
of Brazil, Rio de Janeiro



Soap Import Duty Changes

Soap is included in a large number of goods on which import duty concessions went into force June 30. The present rate on toilet soap is 15 percent ad valorem and 10 percent on other types of soap listed. Concessions, negotiated with 21 other nations under the auspices of GATT (General Agreement on Tariffs and Trade) go into effect in these stages, June 30, last; 1957, and 1958. Duty on toilet soap valued at 20 cents or less per pound drops from 15 percent to 14 percent this year, to 13½ percent in 1957, to 12½ percent in 1958; on toilet soap valued at 20 cents or over, from 10 percent to 9½ percent, to nine percent, to 8½ percent; on leather soap including saddle soap from 10 percent to 9½ percent to nine percent to 8½ percent; on soap and soap powder, n.e.s. (including castile and medicated soaps) from ten percent to 9½ percent to nine to 8½ percent.

—★—

Woburn Names Huber

Ralph B. Huber, sales engineer, has been named New England representative for Woburn Chemical Corp., Kearny, N. J., it was announced recently. Mr. Huber, who maintains offices in Boston, handles Woburn's complete line of fatty acids and oils. He has been active in the soap and other specialties fields for over 30 years. Mr. Huber is assisted by Robert Bennink, Edgar W. Everts, and William H. Huber, Jr.

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Armour Soap Promotion

A couponing promotion campaign for "Dial" soap and "Liquid Chiffon" was announced last month by Armour & Co., Chicago. Coupons entitle consumers to a 10 cent reduction on purchases of two bars of bath size or three bars of complexion size "Dial" soap. The offer applies also on purchases of the two other size cans of "Liquid Chiffon." Also included in the promotion are free entry blanks for a "Monte Carlo" in which the winner will receive one

million French francs in spending money plus all expenses for a "millionaire's weekend" in Monaco, as well as a \$1000 wardrobe. 505 other prizes include Renault sport cars, jewelry and perfume.

Extra profit allowances for dealers are in effect until July 28 and special point-of-sale display material is available. The campaign for both products is supported in Sunday newspaper advertising, and on the George Gobel show on NBC-TV.

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New Dow Surfactant

A new anionic surfactant was introduced last month by Dow Chemical Co., Midland, Mich. Designated "Dowfax 2A1" the detergent is a moderate foamer, said to be susceptible both to foam boosting and defoaming action. The product is suggested for metal cleaning, and household and industrial hard surface cleaning, as well as for industrial applications as a detergent and wetting agent. It is suitable for incorporation in dairy cleaners and bottle washing formulations, and can be used as a fruit and vegetable cleaner.

"Dowfax 2A1" is the first surfactant developed by Dow for use by industry. A light-colored free flowing powder, it has a 93 percent active content by weight.

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Purex Expands TV Schedule

Purex Corp., South Gate, Calif., recently announced an expansion of its television schedule. Following successful sponsorship of "The Big Surprise," the Saturday night jackpot show, Purex will continue alternate sponsorship of the Saturday night 7:30 NBC-TV half hour during the summer with "Down You Go." In addition, Purex is alternate sponsor for the "Purex Festival of Stars" and introduced on July 4 the "Ina Ray Hutton Show." The firm's participation in the Steve Allen show "Tonight" will begin in August and sponsorship of "The Big Surprise" will be resumed when the show returns on Sept. 15.

Lever Sales Appointments

A number of advancements in the sales staff were announced recently by Lever Brothers Co., New York. James L. Brantley was appointed midwest regional sales manager and Lyle B. Garvey was named Chicago district sales manager for the Lever Division. Mr. Brantley's former post as Atlanta district sales manager for the division has been taken over by Arnold E. Johns, former Chicago district sales manager. Mr. Garvey was manager of the Pittsburgh, Pa., district, prior to succeeding Mr. Johns in Chicago. New Pittsburgh district manager is Earl C. Williams, who had been an area manager in the Detroit district since 1952.

Walter B. Davis has been advanced to Chicago district sales manager of Lever's Pepsodent Division. He had served as St. Louis area manager for the Lever Division since last year, and prior to that as Lever area manager in Memphis.

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Niagara Sales Shifts

James E. Ferris, Herbert Heesch, Stanley A. Mattison, Matthew F. McCombs, Joseph E. Thornberg, and Ferri Casciani are included in personnel changes resulting from the recently completed integration of the Niagara Alkali sales department into the sales department of Hooker Electrochemical Co., Niagara Falls, N.Y.

Herbert Heesch, formerly general sales supervisor, has been appointed manager of chemical sales. Mr. Heesch first came to Hooker in 1933 for four years following graduation from the University of Rochester with the degree of bachelor of science in chemical engineering. In 1947 he became sales representative in the New York-New Jersey metropolitan area, was field sales supervisor in 1952-1955, and since then, until the present appointment, was general sales supervisor.

James E. Ferris, manager of sales for Niagara Alkali Co. prior

Gastonia, N. C. . . . where Dow caustic works for textile manufacturers.



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caustic at its uniform, high-purity best. This constant quality protects your *processing*.

Then, too . . . Dow customers everywhere benefit from continual process research, flexible delivery network, prompt field technical service when needed. Does Dow have *your* order? THE DOW CHEMICAL COMPANY, Dept. AL 755G, Midland, Michigan.

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to its merger into Hooker, is now product manager of inorganic chemicals. Mr. Ferris has been continuously employed in sales since 1930. He first came to Niagara Alkali as a chemist in 1926 after graduation from Northeastern University, Boston, where he received a bachelor of chemical engineering degree.

Stanley A. Mattison, now product supervisor of trichloroethylene sales, was graduated from Syracuse University in 1935 as a chemical engineer, and received his master's degree from Columbia University. From 1936 to 1943 he was employed at the National Carbon Co. division of Union Carbide & Carbon Corp. in the sales department, sales development, and in production. In 1946 he joined Niagara Alkali Co. as a salesman.

Matthew F. McCombs has been appointed as product supervisor of potash chemicals. Mr. McCombs has spent the major portion of his thirty years with Niagara Alkali in sales where he had been manager of chlor-alkali sales.

Joseph E. Thornberg, newly-appointed market analyst, has been with Hooker since 1943 in operations, process study, and in technical sales service since September 1953. Mr. Thornberg is a graduate of Northeastern University with the degree of bachelor of science in chemical engineering.

Ferri Casciani has been appointed supervisor of technical service under James S. Walker, manager of technical service, and he will be particularly responsible for technical sales service to the pulp and paper industry. Graduated from the N.Y. State College of Forestry at Syracuse University in 1931 with the degree of bachelor of science, Mr. Casciani came to Niagara Alkali the following year and worked in technical service until 1936, when he was named research director for that company.

The group is under the direction of John S. Coey, eastern sales manager. Robert E. Wilkin, vice-president and director of sales, announced the changes late in June.

Pacifico Named V.-P.

Appointment of Carl Pacifico as vice-president was announced late in June by American Alcolac Corp.,



Carl Pacifico

Baltimore, Md. Mr. Pacifico joined Alcolac in 1954 as director of development. He will continue to manage the development department and in addition he now directs the company's sales program.

Prior to going with Alcolac, Mr. Pacifico had been director of development with Wyandotte Chemicals Corp., Wyandotte, Mich., which he had joined in 1949. A graduate of Drexel Institute of Technology, he served with the Air Force during World War II, then was employed by Publicker Industries, Inc., Philadelphia, until he became associated with Wyandotte.

Improved Skin Cleaner

Dameron Enterprises, Louisville, Ky., is now offering an improved version of its "Vi-Lan Clean" antiseptic skin cleaner, which is intended for use with or without water. This product is a bacteriostatic-type paste skin cleaner fortified with Monsanto Chemical Company's "Actamer."

"Vi-Lan Clean" is also available in a dispensing unit that includes "Scott Industrial Wipers" as well as a receptacle for soiled paper. Further information may be obtained on request to Dameron Enterprises, 427 S. 20th St., Louisville, Ky.

Dow Petrochemicals Plans

Dow Chemical Co., Midland, Mich., is considering acquisition of Bay Refining Corp. and its associate, Bay Pipe Line Corp., both in Saginaw, Mich., it was announced in June. Dow plans construction of a petrochemicals plant on a site it owns adjacent to the Bay refinery. W. H. Schuette, Midland division general manager, said. Part of Bay Refining's petroleum by-products would be piped to the new plant for processing into petrochemical products, chiefly ethylene. The new facilities will be completed and on stream late in 1957.

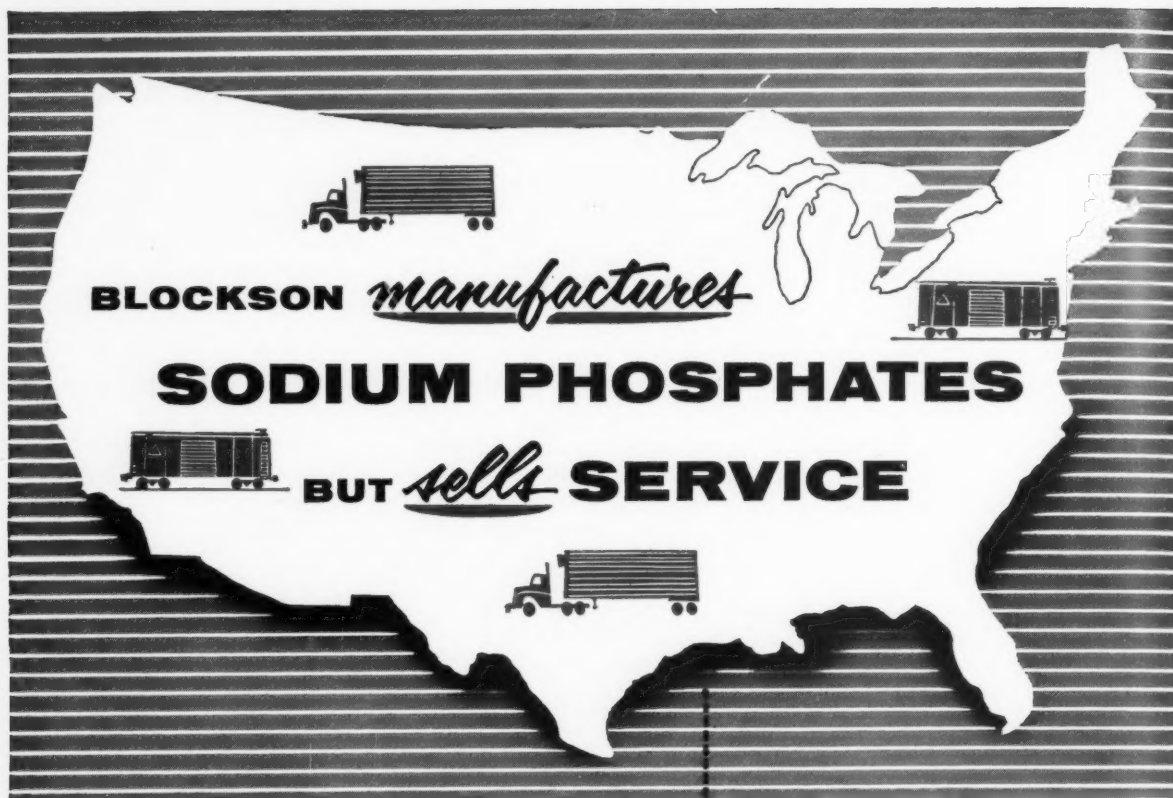
No change in current operations of the Bay companies is considered according to W. Rolland, manager of Bay Refining. Plans do not call for any change in personnel or management

New Hand Cleaner

A new waterless hand cleaner that is said to be pourable has been developed by Science Industries, St. Louis, it was announced recently by Erwin O. Chase. Called "Magic," the new cleaner is designed for use with an ordinary soap dispenser. It contains a built-in skin conditioner, according to the manufacturer. The firm also makes floor cleaners, deodorants, cleaning powder, disinfectants, insecticides and hand soaps. Further information on "Magic" waterless hand cleaner may be obtained on request to Science Industries, 1509 Broadway, St. Louis 6, Mo.

Spring to Kelite

Kelite Corp., Berkeley Heights, N.J., recently announced appointment of Samuel Spring as laboratory director. Dr. Spring was formerly associated with Pennsylvania Salt Manufacturing Co., Philadelphia. He has published a number of papers on metal cleaning, detergency, phosphatizing, and related subjects and is currently serving as chairman of A.S.T.M. Committee B-8 which covers cleaning prior to electro-plating.



THERE is a reason for the very substantial tonnage of sodium phosphates Blockson ships to industrial areas far from our greatly expanded plant facilities here in Joliet. That reason is continuous prompt shipment—a few bags or many carloads—minus the red tape usually associated with an operation as large as ours.

Again and again customers tell us they couldn't get better service if our plant were located in their own industrial community.

There is a reason for that, too. At Blockson, production and sales are so closely coordinated that a single collect phone call is all that is required to expedite your unforeseen needs and get your sodium phosphates en route the very same day if it is humanly possible, and most frequently it is.

We welcome the responsibility of functioning as an arm of our customers' production setup, minimizing their inventory and warehousing expense, timing and dovetailing dependable shipments with their own processing operations and at all times providing a uniform and dependable competitively priced product—readily available in your required granulations and specifications.

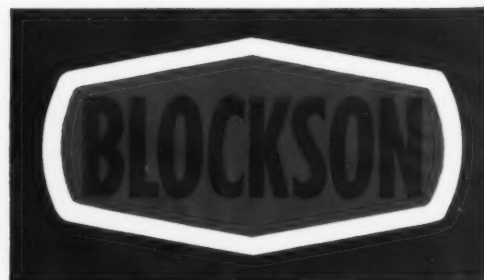
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CRYSTALLINE • MONOHYDRATE
- **Tetrasodium Pyrophosphate**
ANHYDROUS
- **Sodium Polyphos**
(SODIUM HEXAMETAPHOSPHATE)
(SODIUM TETRAPHOSPHATE)
- **Sodium Acid Pyrophosphate**
- **Trisodium Phosphate Chlorinated**
- **Disodium Phosphate**
ANHYDROUS • CRYSTALLINE
- **Monosodium Phosphate**
ANHYDROUS • MONOHYDRATE
- **Sulfuric Acid**
- **Sodium Fluoride**
- **Sodium Silicofluoride**
- **Hygrade Fertilizer**
- **Teox® 120**
NONIONIC SURFACTANT



Two Solvay Appointments

Solvay Process Division of Allied Chemical & Dye Corp. made two technical appointments in its New York office, it was announced recently by L. B. Gordon, vice-president: H. W. McNulty was named technical assistant to the manager of the organic chemicals section and T. W. Reed becomes technical assistant to the director of product development.

Prior to his recent advancement Mr. McNulty held the post now held by Mr. Reed. He joined Solvay in 1951.

Mr. Reed went with Solvay in 1950 and since then has been a salesman at the firm's Boston branch. Both men will be headquartered in New York.

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Rhodia Names Reps.

Rhodia, Inc., New York, recently announced the appointment of Comerciale Reka S. A., Mexico City, as sales and technical representatives for synthetic aromatic chemicals and compounds and for "Alamask" industrial deodorants in Mexico. At the same time Rhodia announced the appointment of Luis Felipe, Havana, as sales and technical representative for these products in Cuba.

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Rutgers-Colgate Lab Open

The dedication of the Division of Dental Medicine of Colgate-Palmolive Co., New York, in cooperation with Rutgers University, New Brunswick, N. J., took place at the university on June 20. The dedication ceremonies were attended by William Lee Sims II, Colgate president; Maison Welch Gross, provost of Rutgers University; Thomas H. Vaughn, Colgate vice-president; James B. Allison, director of the bureau of biological research at Rutgers; Kenneth L. Russell, Colgate director of research, and Lewis Webster Jones, president of Rutgers.

The new division located on the Rutgers campus, will be primarily concerned with the biolog-

ical sciences such as pathology, histology, pharmacology, histochemistry and bacteriology. Headed by Dr. John W. Hein, its staff will explore the causes of dental decay, the role of nutrition in dental health, and other basic problems.

Colgate's new division is claimed to be the first industry-supported laboratory staffed by scientists especially trained in this field and exclusively devoted to basic studies in oral health.

The dedication was preceded by a colloquium at the Institute of Microbiology. Papers covering various aspects of dental health were presented by members of the division's staff.

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BIMS Golf July 24

BIMS will hold a member-guest golf tournament Tuesday, July 24, at Winged Foot Golf Club, Mamaroneck, N. Y. Dinner and awarding of prizes will follow a day of golf. Number of guests is not limited.

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General Buys Plant Site

General Chemical Division, Allied Chemical & Dye Corp., New York, recently announced the purchase of approximately 120 acres fronting on Newark Bay in Elizabeth, N. J. The new plant to be built on this site will process raw materials supplied by Esso Standard Oil Co. from its Bayway refinery and will return finished products to Esso. Other industries will also be served from this plant. The principal product will be sulfuric acid, used in large tonnages by synthetic detergent manufacturers, refineries and numerous other branches of the chemical industry.

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Observes 125th Year

The observance of the completion of its 125 years in business on July 21 of Philadelphia Quartz Co., Philadelphia, will be marked on July 20 with a holiday for all employees at its offices and plants. Founded in 1831 by Joseph Elkinton, the firm originally manufactured soap and candles.

New Alcolac Shampoo Base

A new fatty alcohol sulfate, just introduced by American Alcolac Corp., Baltimore, is said to combine the desirable properties of lauryl alcohol sulfates with a cloud point below freezing, clear solubility in the hardest water, and good foaming characteristics in soft and hard water. Designated "Sipon ES" the new Alcolac product is a sodium lauryl ether sulfate, suggested for use in shampoo formulations. Its low cloud point makes it suitable for incorporation in clear liquid shampoos. Other applications foreseen by the manufacturer include the formulation of such household items as scouring powders and pads and in stabilization of latex or resin emulsions.

"Sipon ES" is an anionic and compatible with anionics and nonionics, but incompatible with true cationics. The new detergent is compatible with soap and could be formulated into a product with good foaming characteristics in the presence of soap, Alcolac claims. Stability at high pH values ensures compatibility with alkaline builders.

Alcolac is conducting research designed to develop a range of novel ether sulfates derived from different alcohols, such as for instance tallow alcohol. Derivation from such sources which are lower priced than lauryl alcohol might open wide fields of industrial application for a new series of ether sulfates.

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Essential Oil Prices

Wider distribution in the United States of market reports on French essential oils and their prices is now being undertaken by William A. Hoffman, Inc., 366 Broadway, New York 13, N. Y. For the past 18 months this service has been available exclusively to Hoffman customers. Source of the information is Hoffman's French associate: Etablissements Adrian & Cie, S. A., Marseille, France.

Worth Your Investigation...

CYCLAMAL

An Aldehyde of great stability and of such high degree of purity that it can be used in the finest perfume extracts as well as soaps and cosmetics.

RESEDALIA

An Acetal resembling the aroma of Reseda Mignonette. It is a valuable addition to all floral bouquets, and as a modifier for the purpose of rounding off all types of compositions.

VERONOL

An Aldehyde of great potency; imparts the aldehydic top note to perfumes to which it is added. It is extremely valuable as a modifier. Used from 1/10 to 1/4 of 1%.

ROSANOL

An Acetal, ideal for all rose type compounds, because of its fine character, great lift and extreme stability.

The advantage of these aromatic chemicals is that their great purity permits their use in the most luxurious perfumes . . . and their low cost makes them feasible for even the most inexpensive soap fragrances.

Sole Representative in the United States for J. and E. Sozio, Grasse, France

RESINOIDS • NATURAL ABSOLUTES • ESSENTIAL OILS

Write for our complete catalogue.

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VERONA CHEMICAL COMPANY

Plant and Main Office: 26 Verona Avenue, Newark, N. J.

1210 Rosedale Avenue, Chicago, Ill.

Well Managed Firms Cited

Procter & Gamble Co., Cincinnati, and Monsanto Chemical Co., St. Louis, are among the most highly rated of 409 companies cited for outstanding management performance in the 1956 edition of the "Manual of Excellent Managements," published by the American Institute of Management, New York. The 409 firms were selected from 4000 American and Canadian companies surveyed by the institute.

P&G is praised for its economic function and research and development operation, for the soundness of its internal procedures and lines of communications, and for the growth, stability and potential of its earnings. In addition, the soap company is cited for its exceptional sales success and the degree to which effective management in that area has aided the entire effort, for the quality of its executive personnel, unity of command, executive training and development, and the general harmony which has contributed to overall excellence.

Monsanto's growth, reputation and contribution to the national economy are praised, as are the firm's carefully planned and fruitful research activities. Also cited is a noteworthy production record obtained through prudent employment of physical facilities and through healthy employee relations.

Under the point-rating system applied in the manual P&G ranks in the highest group, scoring over 9000 points, Monsanto in the second group of 8,500-9,000 points, which also includes American Cyanamid, du Pont, Food Machinery and Chemical, Olin Mathieson, and Union Carbide. Colgate-Palmolive, Continental Can, and Pennsalt figure in the 8000 to 8,500 points group. Included in the 8000 to 7,500 class are Allied Chemical & Dye, American Can, Diversey, Dow Chemical, Pratt & Lambert, Swift & Co., and Victor Chemical Works. Executives of each company included are listed with their titles, a useful reference feature. Copies of the manual, clothbound, 192 pages, are

obtainable from the American Institute of Management, Inc., 125 East 38th Street, New York 16. Price to non-members is \$20.00 a copy.

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Syndets Market in Britain

About one hundred million dollars worth of "soapless washing powders" were used in Britain last year, nearly six million dollars more than in 1954. Synthetics now account for 37 percent of the combined soap and detergents market in Britain. According to the big petroleum companies who supply the raw materials, 200,000 tons of synthetic washing powders were used in 1955, 190,000 tons in 1954, and 160,000 tons in 1953. Exports of the synthetic powders amounted to nearly 19 million dollars in 1955.

Unilever, Ltd. and Thomas Hedley & Co. reportedly dominate the syndet market and are waging a most intense advertising campaign in this fiercely competitive field. Although Hedley reports a turnover volume in 1955 similar to that in 1954 profits in 1955 have dropped to 514,000 pounds sterling from 2,203,000 pounds sterling in 1954. This striking reduction in profits is attributed to keener selling prices, increased selling and manufacturing costs, and the maintenance of marketing expenditure at the high levels of previous years.

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Synthetic Ambergris

Dragoco, Inc., Holzminden, Germany, recently introduced a synthetic substitute for five percent natural ambergris tincture. Trade-named "Ambron" the new specialty is available from the firm's newly established American division located in New York. To prepare a tincture, 25 grams of "Ambron" are dissolved in one liter of 96 percent alcohol. The solution is left to stand for a short period, with occasional shaking. The tincture is then ready for use and can be added as is to all compositions. Soluble 10 percent in 80 percent alcohol by volume, the new product is suggested for use in shampoos, soaps, and other personal products.

Pharma-Craft Offices Move

Pharma-Craft Corp., a subsidiary of Distillers Corp.-Seagrams, Ltd., has consolidated its offices and facilities at its home plant in Batavia, Ill., it was announced recently by Frank W. Bell, Pharma-Craft president. Executive and sales offices, previously located in the Chrysler building, New York, now occupy modernized quarters in Batavia. The firm makes medicinal soaps, personal deodorants, and other specialties.

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Bennet Honored

H. Bennet, president of Glyco Products Co., New York, was elected a member of Tau Beta Pi, honor engineering society. Mr. Bennet received the membership at a recent meeting of the New York University chapter of the society.

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DCAT Nominations

Lloyd I. Volckening, Ivers-Lee Co., New York, has been named chairman of the nominating committee of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, it was announced recently by Sydney N. Stokes, van Ameringen-Haebler, Inc., New York, Section chairman. Other members of the committee are: Stanley I. Clark, Sterling Drug, Inc.; James Day, Dow Chemical Co.; Charles M. Macauley, Charles M. Macauley & Associates; and Charles P. Walker, Jr., van Ameringen-Haebler, Inc. The committee will present a list of nominees for election to the executive committee at the Section's annual meeting at Pocono Manor, Pa., Sept. 27-30.

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New West Hand Cleaner

A newly formulated waterless hand cleaner was introduced last month by West Disinfecting Co., Long Island City, N. Y. Designed to remove soil, grease, inks, paint, and grime from the skin the product is a white emulsion of almost neutral pH and high lanolin content. West says the new cleaner is mild to the skin and free from alkali and abrasives.

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Sequestering Agent

Economical . . . Efficient

Amber liquid . . . especially
effective with iron and
heavy metals.

Write for further details
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Farm Women Prefer Detergents

DETERGENTS far outrun soaps for washing clothes and dishes among women who answered a questionnaire circulated by the *Farm Journal*, Philadelphia. The journal conducted consumer preference studies for detergents, shampoo, hand care preparations, and home permanents. For dish washing, four detergents got a preference vote of 43.3 percent before the first mention of a soap. The syndets were: "Tide" (P & G), "Joy" (P & G), "Vel" (Colgate), and "Fab" (Colgate); the soap was "Ivory" (P & G).

For laundry uses 50.0 percent of the vote went to the following three detergents: "Tide," "Cheer" (P & G) and "Fab."

Participants made a distinction between soaps they use for hands and face, and soaps for the bath. For face and hand care their favorites were listed in this order: "Lux" (Lever), "Ivory," "Camay" (Colgate), "Palmolive" (Colgate), "Dial" (Armour), "Sweetheart" (Manhattan Soap, now Purex), "Woodbury," "Cashmere Bouquet" (Colgate), "Lifebuoy" (Lever), "Lava" (P & G), "Kirk's Castile" (P & G). For the bath "Ivory" came first, followed by "Lux," "Lifebuoy," "Camay," "Palmolive," "Dial," "Sweetheart," "Cashmere Bouquet," "Woodbury," "Vel," and "Kirk's Castile."

Of the women who answered the questionnaire on hairwashing habits about three-quarters always wash their own hair. Of the remainder most wash their hair at home at least part of the time. Four brands of shampoo account for almost half of all sales to the women who answered the questionnaire: "Luster-Creme" (Kay Daumit, Colgate), "Prell" (P & G), "White Rain" (Toni), and "Halo" (Colgate). Half of the respondents use liquid shampoo, another fourth use cream shampoo with liquid creme as a close third. Large size con-

tainers accounted for more than half of the mentions. The majority of the farm women buy their shampoos in drug stores, with grocery stores a close second, followed by variety stores and house-to-house agents.

In the hand care preparations study women indicate that they use liquid lotions most frequently after washing dishes, with large or medium sized containers leading. Only about three percent buy small sizes.

Perry Adds Division

A new subsidiary has been established by Perry Bros., Inc., Woodside, N. Y., it was announced recently by Den Perry, vice-president. The new Perbro Laboratories Division manufactures a wide range of essential oils and flavor bases. Herbert J. Bass has been placed in charge of the technical service program and Allen J. Baron is responsible for quality control and production. Facilities have been enlarged and incorporate latest developments, the firm says.

In New Diamond Posts

Two appointments to newly-created positions in the recently formed soda products division of Diamond Alkali Co., Cleveland, were announced recently by Henry B. Clark, general manager of the division.

Arthur T. Bennett, superintendent of the former alkali division since last August, takes over a similar post in the soda products division, production facilities for which are located at Diamond's Painesville works.

Robert A. Springer, manager of research, alkali division, for the past two and one-half years, becomes manager of research, development and technical service for the soda products division. He continues to maintain headquarters at the Diamond research center.

Mr. Bennett has been with

Diamond since June, 1954, when he joined the company as technical assistant to A. B. Tillman, general superintendent of the former alkali division prior to the latter's appointment as assistant works manager—operations.

Mr. Springer joined the company in April, 1949, as technical service representative. In January, 1951, he was advanced to special staff assistant, and in October, 1953, became manager of research, alkali division.

In Monsanto Post

The appointment of Miss Jane Creel as manager of the home economics department of Monsanto Chemical Company's consumer products division was announced in St. Louis recently by E. L. Hodge, director of sales for the division.

In making the announcement, Mr. Hodge said Miss Creel would supervise an expanded home economics program involving the division's home laundry consultants now serving in major U. S. cities and surrounding areas.

Miss Creel was graduated from the University of Nevada in 1945 with a B.S. degree in home economics. After two years' service overseas with the American Red Cross, she joined R. H. Macy, Inc., at San Francisco, as a member of that firm's personnel department. Subsequently she became home laundry consultant for the division's San Francisco sales district. Prior to her present assignment, she was a member of the division's advertising and sales promotion department.

Sweet Foremost Sales Rep.

M. B. Sweet Co., 9100 South Park Ave., Chicago was recently appointed sales agent for Foremost Food and Chemical Co., El Dorado Division, according to Arthur Berry, president of Foremost-El Dorado. Sweet will represent Foremost Food and Chemical in the sales of coconut oil fatty acids, methyl esters, "Defoamer ED" and other products in northern Illinois, Indiana and eastern Wisconsin.



Wyandotte chlorine ... for high-quality bleach formulations

AMONG TODAY'S growing and important list of chemicals, chlorine is one product that is always in demand. And one of the important uses of chlorine is in the formulation of bleaching products . . . making possible such compounds as sodium and calcium hypochlorite bleaches.

Bleach and soap makers have come to depend on Wyandotte for high-quality chlorine. For here, at Wyandotte, we make chlorine in centrally located plants, from purified brine pumped from our own salt wells. This assures us of rigid control in chlorine manufacture . . . from basic ingredient to finished product.

We give our chlorine special care in shipping, too. After each trip, cars are thoroughly inspected; all angle valves are removed, tested, and reconditioned or replaced as needed. During loading, the contents are sampled and analyzed; cars are then loaded, and held for 24 hours, with a final test before release.

Investigate Wyandotte's high-quality chlorine for your own needs. Contact us today! *Wyandotte Chemicals Corporation, Dept. SCS-7, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS
MICHIGAN ALKALI DIVISION



BLEACHING AGENTS • CARBOXYMETHYLCELLULOSE • CAUSTIC SODA • CALCIUM
CARBONATE • CALCIUM CHLORIDE • CHLORINE • DETERGENTS (NONIONIC AND ANIONIC)
EMULSIFYING AGENTS • SODA ASH • SODIUM BICARBONATE • SOLVENTS
(CHLORINATED) • WATER SOFTENERS • WETTING AGENTS

NIRC Moves to Bethesda

The National Institute of Rug Cleaning moved last month from Silver Spring, Md., to Bethesda, where it now occupies the second floor of a new building at 7355 Wisconsin Avenue. NIRC will maintain its pilot rug cleaning facilities with the National Institute of Drycleaning in Silver Spring. Research facilities are being expanded to include working agreements with 12 rug cleaners in the metropolitan Washington area.

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Syndet Shower Dispenser

A liquid detergent dispenser supplying syndet foam through the shower head was patented recently by Emanuel G. Gundlach, Ebenezzer, N. Y. The device is covered by U. S. Patent 2,743,913, issued May 1, 1956. The invention covers a shower head with means for selectively mixing liquid detergent and air with the water to supply a cleansing foam. The syndet dispenser has a plastic tank in bottle form with a screw cap through which the device is refilled. The bather can control and cut the flow of detergent into the mixing chamber by swinging the tank from dispensing to non-dispensing position. When the dispenser is not in operating position, the shower head supplies clear water for rinsing. Inexpensive construction, easy installation, and low cost maintenance are claimed for this device by its inventor.



SOAP and CHEMICAL SPECIALTIES

Election of Richard E. Brainard as a vice-president of Shulton, Inc., Clifton, N. J., was



announced last month by George L. Schultz, president. In his new position Mr. Brainard heads the fine chemicals division.

Since joining the company in 1945 Mr. Brainard has successively served as production manager of toiletries, assistant to the president, and manager of the fine chemicals division. He was graduated with a B.A. degree in chemistry from Harvard University.

Plans to build a new administrative center in Midland were announced recently by Dow Chemical Co., Midland, Mich. In its final form the center will be a group of buildings in an area almost a half mile long and a quarter of a mile deep containing headquarters for the entire company. Ground is to be broken for the first units this summer, according to Leland I. Doan, Dow president. The chemical sales and service building is to be constructed first and is scheduled for completion late in 1957. It will house the general chemicals management; the organic, inorganic, "Dowicide," alkali, solvents and agricultural chemicals sales departments; the technical service and development department; the company's traffic department and related service groups.

JULY, 1956

Look to Wyandotte for technical service

WYANDOTTE's technical service is equipped to give prompt, on-the-job practical service as well as technical data to all its users.

Take bleach manufacturers, for example. Our years of experience in this field enable us to offer helpful tips on handling and storing chlorine, and on methods and procedures in making bleach. This information is useful in insuring that the high quality of our chlorine is maintained from its arrival at the bleach plant to its ultimate use.

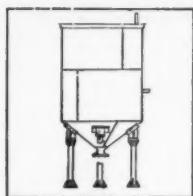
We also conduct experiments, both in our own laboratories and in cooperation with customer research, to help evaluate bleach formulations and assure the highest quality end product. In many cases, this service covers ingredients that are used in bleach – other than chlorine. In addition, we work with our customers when a change is contemplated in the formulation of their products.

For assistance with your product, or for further information about Wyandotte chlorine and our technical service, contact a Wyandotte representative today, or write us direct. *Wyandotte Chemicals Corporation, Dept. SCS-7, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS

MICHIGAN ALKALI DIVISION • HEADQUARTERS FOR ALKALIES

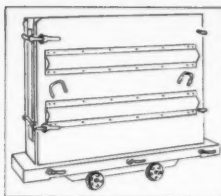




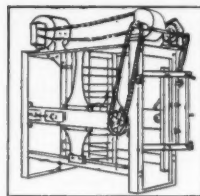
KETTLES



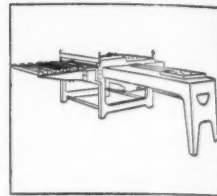
CRUTCHERS



SOAP FRAMES



SLABBERS



LAUNDRY SOAP CUTTERS

No Operator Injuries Reported
in Seven Years by Users of the

HOUCHIN SAFETY AIR PRESS

Houchin is exclusive manufacturer in United
States under U. S. A. Patent License.

Although there are a great many of these safety air presses in use today not a single accident to an operator has been reported in the seven years these presses have been on the market.

The air ram remains locked at all times, until the operator has moved both hands away from the die box to depress the right and left hand valve release controls *simultaneously*.

PRESSING IS QUICK, POSITIVE AND UNIFORM

Dangerous, old fashioned, tiring foot lever controls are eliminated. The operator remains comfortably seated. The actual pressing and ejection operations, although manually controlled, are completely automatic.

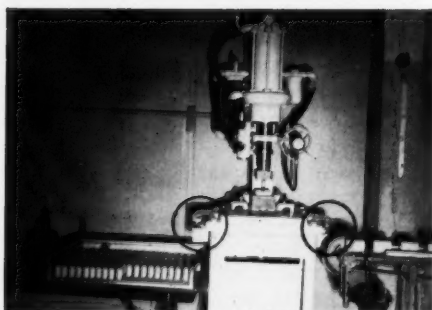
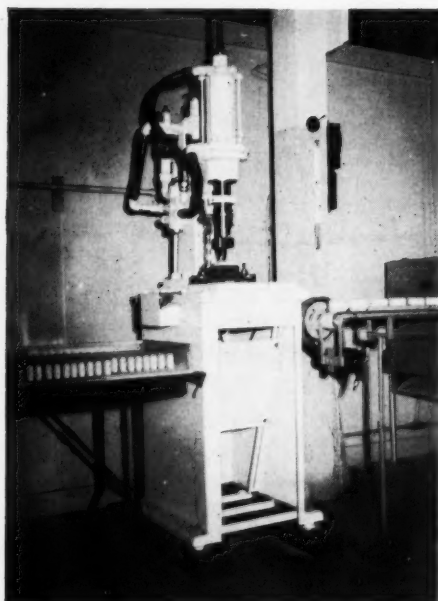
HOURLY AND DAILY PRODUCTION IS GREATER.

Operators soon learn the simple, safe, fast routine of feeding blanks to either Box or Pin Dies.

FATIGUE IS ELIMINATED. Efficiency, speed and safety of production consequently gain.

SURFACE PRESSURES up to 2500 lbs. are attained by a simple thumb and finger valve adjustment. Either single or multiple air ram strokes are made at will by the operator.

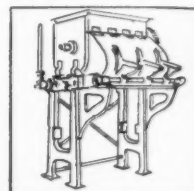
This air controlled press may be used for "cutting die" operations, such as gas-ket making, swatches or punching.



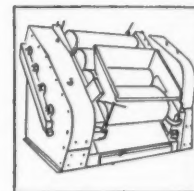
NEW IMPROVED MODEL B

Note safety automatic hand levers on each side of the press, away from the die position. Both hands must be used to depress right and left hand control levers *simultaneously*, in order that the air ram may function.

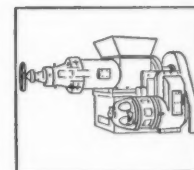
HOUCHIN builds all the kindred machinery needed for completely automatic, continuous or intermittent, soap production.



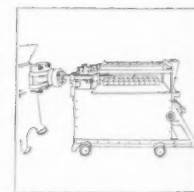
AMALGAMATORS



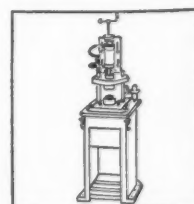
MILLS



PLODDERS



TOILET SOAP CUTTERS



PRESSES

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HAWTHORNE, NEW JERSEY, U. S. A.

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Production SECTION

Efficiency and Economy in

Packaging Operations

By William T. Ropp*

Pack-It, Inc.
Newark, N. J.

PREACHING, practicing, and mutual help are the ingredients of any concerted operation and particularly of an operation as complex as small scale packaging. The preaching is done by management. A prime requisite for this function is leadership. There are occasions when orders must be given and executed without questioning. While this is recognized by the practitioners, it is certainly irritating for the production man to see "rush" jobs, completed days or weeks ago, going unshipped for a lengthy period. He is angered if, in spite of repeated requests for seemingly reasonable and practical changes, he is left to battle the same production problem over and over again. His requests may involve no more than a slight alteration in label size or better die cutting of folding cartons. Perhaps folding boxes are not pre-broken although this may have been requested many times but not deemed necessary by the buyer or the vendor. In their opinions perhaps the amount ordered is not a sufficiently long run to justify this added feature. Perhaps a dollar may have been saved here to cost ten later, plus aggravation by the end user. It must ever be remembered, authority is only a delegation of responsibility and it is management's responsibility to be helpful to all who need it. I can assure you, anyone in production needs help all the time. Make it a

point to know the things that went wrong today. Study them and take necessary steps so they won't recur.

When things are going wrong or there are delays and it seems not only impossible to get production but even a promise or schedule, what is management's usual attitude? Is it hell raising, blood and thunder or calm analysis of the situation? Do we approach those who have the job to do with the thought of being helpful? Do we try to determine why, instead of jumping to the conclusion that the other part of the team is just being ornery? Next time get out on the floor and don't ask too many questions but stand around and observe. You will probably observe the "ornery" ones are active, maybe even seem to be running around in circles and they certainly feel that what they are doing is more important at the moment than what you wish they were doing, and they may be right. Don't forget that production is what we sell and constitutes the true wealth of the organization, not the machine that may have cost several thousands of dollars. Allow the machine to stand idle or to produce in insufficient quantity or quality and it would be better if the investment was merely dollars in the bank.

Your observations at the site of trouble should be discussed with your production personnel and plans should be made and responsibilities outlined at a quiet moment. As to the timing of these planning ses-

sions it depends on the size of the organization. A large firm can work it into the busy day but for the smaller groups by all means after regular hours. We have a scheduled meeting each Tuesday and Thursday immediately after the day's work ends. Let them run fifteen minutes or as long as necessary to really accomplish the purpose of the meeting. Never, never have a meeting for a meeting's sake. Have a program; stick to it; get it over with. Don't have "bull sessions" from which participants leave feeling their time was wasted. Work toward your true objective: elimination of the irritants. Fortunately most of the problems can be eliminated. It is management's function to be available when needed and to be the true balance wheel between customers, employees, and stock holders.

Short Runs

WE shall now examine some specific problems and provide some solutions. We will examine 'short runs', which is a strictly relative term. Running time and number of units packaged in a short run for, say, Bristol-Myers or Colgate certainly differ from a short run for a smaller packer. You can find your own definition. This talk is concerned with any run or order for which no permanent line is set-up to handle it as regular routine. Think of it as a first time order and as a repeat item. On a first order our planning begins with the

*Paper presented during the 21st annual meeting of the Toilet Goods Assn., New York, May 16, 1956.

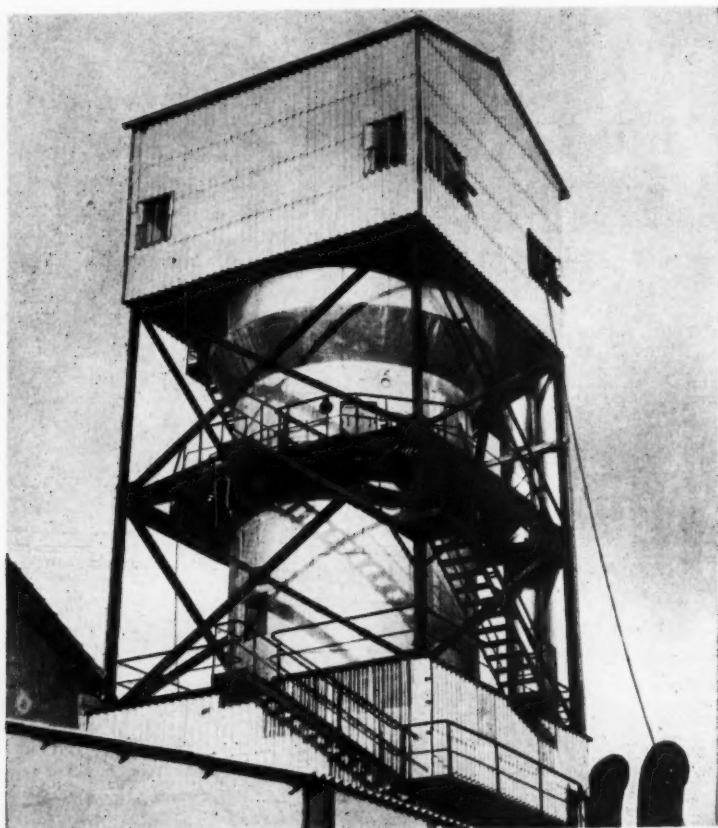


MECCANICHE

CORSO SEMPIONE, 51

MODERNE

BUSTO ARSIZIO (ITALY)



"SABIZ" SPRAY DRYING PLANT

"BALLESTRA" Patent

Manufacturing Characteristics

Atomization spray nozzles.
Adaptable to three modes of operation: parallel flow, countercurrent and mixed flow.
Product discharged at room temperature: eliminates agglomeration.
Free discharge of product without use of auxiliary equipment.
Direct or indirect utilization of gases obtained by the complete combustion of fuel oil or natural gas.
One main panel for control and operation.
Automatic continuous perfuming possible.
Can spray dry heat sensitive products.

Standard Outputs

From 250 Kgs. per hour up to 3000 Kgs. per hour and more, if required.
Efficient operation of the plant results in substantial savings.

Physical Characteristics of the Dried Products

From the same slurry, merely by adjusting some valves, it is possible to get:

Dried products such as hollow beads or fine powder.

Crystallized products such as beads or granules.

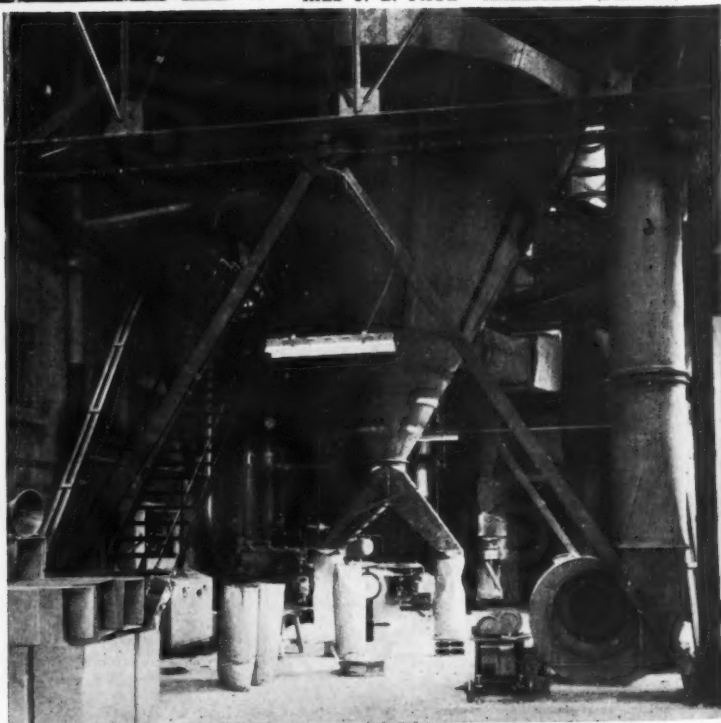
Adjustable to a wide range of specific gravities from the same slurry. If used for synthetic detergents, this plant can be operated automatically in connection with our continuous sulfonation plant "SULFAN."

Without any obligation to you, our technical staff, research laboratory and experience are at your disposal: let us solve your production problems. Please don't hesitate to ask for references, analyses, offers, samples, visits to factories equipped with our plants etc.

500 Kgs. per hour "SABIZ" Spray Drier in operation at HUIERIES ANTONIN ROUX & SAVONNERIES J. B. PAUL — MARSIGLIA (FRANCE).



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SOAP and CHEMICAL SPECIALTIES

preparation and analysis for our quotation. We decide how the job might be accomplished; which equipment can be used; how it can be used; people required; male and female; what each person would be doing and how; total hours of labor reduced to dollars of direct labor cost; anticipated production and productivity of dollar of direct labor cost. This is committed to paper and, when deemed necessary, a sketch may be made of proposed layout. This is referred to at the time the job is set up. The planned procedure is followed except that we start off with fewer people on a line than the plan may have called for. Sometimes fewer people are enough. People can always be added to a line without resistance. However, if you have started with too many the excess operators can be removed only with the greatest difficulty. Don't overmechanize—work upwards from the simplest possible set up.

Case History

A REPORT of the complete job is most important. How did it work out? Especially the productivity per dollar of labor. If not, why not? Right now while it's fresh in mind prepare a case history of that job, listing all phases, including type and kind of equipment used, arrangement and location of the equipment. Record machine adjustments or clearance if possible, and speed at which machines were set. Then record anticipated production based on estimate, ideal production based on speed of equipment at 100 percent efficiency and actual production at end of day and end of run. At this point mark down any changes that should be made before the job runs again. Be sure everyone in any way connected with the job gives his or her comments. During the run listen to any "beefs" by the personnel doing the work. Perhaps next time it can be made a bit easier for them to make more money for you. If the set up is at all complex, photographs should be taken and become

a part of the history. Have a complete word picture of what comprises the finished package, describe all components. Keep a finished package as part of the history. Leave nothing to chance or nothing mysterious.

Job Analysis

NEXT step, and this is the management's job, is an analysis of the history and study of suggestions for improvement. Then decide: 1. What are the chances for the job running again? When? 2. At what cost could the suggestions be carried out? If too high for all, for part of them? 3. If the job will be run again and it has been decided to follow some of the suggestions then see that a follow-up accomplishes the desired objectives.

When this job is scheduled to be run again, discuss it ahead of time, read the history, check availability and condition of all equipment previously used. Determine to follow suggestions from previous run and be pleased only with a better performance than before.

Suppliers' Services

MAKE use of talent outside your organization. Your suppliers offer you facilities, services, and laboratories. If the salesmen of our suppliers do not talk enough about how they can be of service it is because of how they are treated rather than unwillingness to serve. Do they see only the buyer? Is he just too busy to be more than polite and friendly and often enough not even that. Have your production men know all salesmen of machine and tool companies, adhesive, containers, cartons, labels, closures, etc. Encourage them not only to ask for help or suggestions but to demand proper attention by the suppliers, to expect and get the added extras your company is paying for.

Deal with manufacturers of machines on the basis of a test or laboratory run and have them put

in writing not speed per minute and dollars of cost per machine, but rather how many finished packages at the end of the day, day after day and the cost in hours of labor. Insist on guarantee of production within your plant and with your people not merely on delivery of a machine that makes so many cycles per minute or per day. Better kind of machine selling is on the increase and you can hasten it by demanding it.

When buying equipment keep in mind its flexibility. What else will it do? For a few more dollars you may choose a model that is adaptable to some job, slightly different in size or shape. Next year you may have such a job to do that was not thought of at the time the equipment was purchased.

Contract Packagers

CONTRACT packagers are an important segment of the overall packaging field and should be considered as professional people and treated as such. Choose your contract packager as you would your personal physician or your corporate counsel or accounting firm, on the basis of integrity and ability.

You don't need me to tell you about integrity. To judge a packager's ability know about his organization, equipment, and record of performance. For whom has he worked? How important is your business likely to be from the contract packagers' point of view? Will they get excited when you are excited and be enthusiastic to match your enthusiasm? Will they help you when you are in trouble? Will it be a happy marriage?

When you have selected your packager tell him what you want, but put it in writing. Be realistic when asking quotations; be specific and describe in complete detail; submit samples; be willing to furnish whatever is required for test runs or time studies if the contractor asks for it. He is trying to protect you.

Cooperate to work up specifications, standards of fill, yield, to

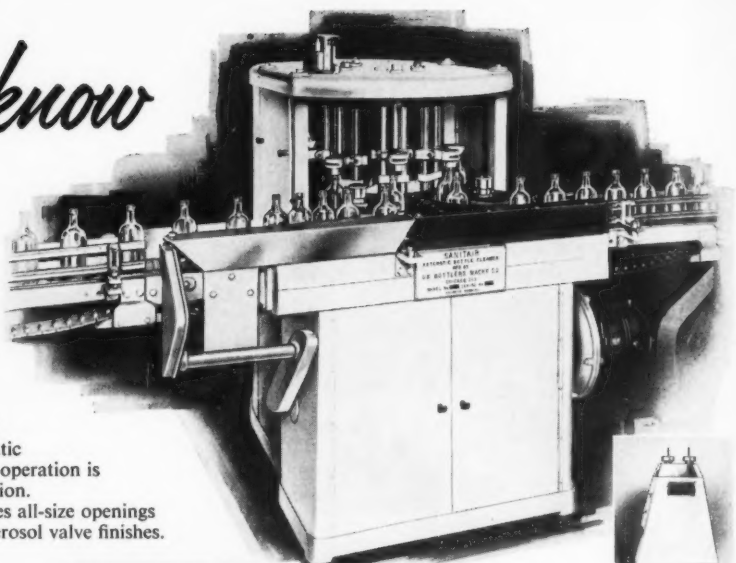
You'll never know

HOW MUCH FOREIGN MATTER
THERE CAN BE IN NEW CONTAINERS
UNTIL A **SANITAIR** AUTOMATIC
AIR CLEANER PROVES IT TO YOU . . .

A good product deserves a clean container . . . for chemical safeguards as well as for sanitary precautions.

Containers cleaned by the U. S. Sanitair method provide an *economical* packaging safeguard to product uniformity. Once the completely automatic Sanitair is synchronized into the packaging line, its operation is entirely automatic. Adjusts easily to any line operation. Quick changeover for all sizes of containers. Handles all-size openings including all-glass sprinkler top, wide mouth and aerosol valve finishes.

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THE E. Z. AIR CLEANER for air-cleaning new containers of any size or type. Containers are inverted over air valves, two at a time . . . up to 40 per minute. Write for "E. Z. Bulletin."



THE U. S. ROTARY RINSER for rinsing bottles or jars, any size, any shape. Cleans both insides and outsides of containers with water, steam or compressed air. No neck-chipping, as inverted containers rest on shoulders. Write for "Rotary Rinsers Bulletin."

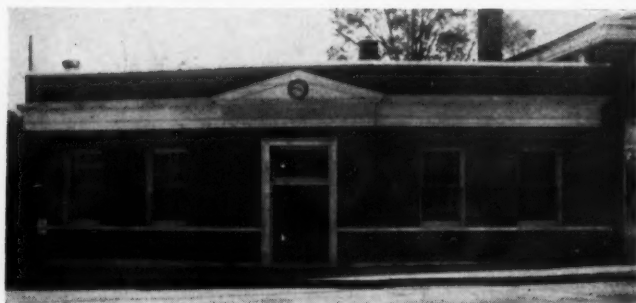
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establish quality controls, etc. Let it be understood how shipments are to be made and whether warehousing is necessary and to what extent. Work with your contractor in advance, secure a space on his schedule. Keep him fully informed as to schedules from suppliers and don't over-load his plant with unbalanced inventory.

That's about all there is to it. It's really quite simple: you place an order with a contract packager and you immediately have another plant complete with equipment, space and personnel without increasing over-head or other cost.

Last but not least, let him make a profit, in that way only can he be of service.

— ★ —

"Epolene" Wax Data

A new line of polyethylene waxes has been developed by Eastman Chemical Products, Inc., Kingsport, Tenn., and is described in an illustrated 22-page brochure published early this month. Designated "Epolene N" (non emulsifiable) and "Epolene E" (emulsifiable), these products are suggested for incorporation in floor waxes, polishes, and a number of other specialties. They are delivered to the industrial consumer in pellet form, packaged in bags or drums weighing 100 to 260 pounds. The brochure gives suggested uses and properties of these polyethylene waxes as well as ingredients and procedure for the formulation of different types of floor products and automotive polishes.

— ★ —

Sulfamic Acid Granules

E. I. du Pont de Nemours & Co., Wilmington, Del., recently announced that "DuPont Sulfamic Acid" is now available in granular as well as crystal form. The new granular form is said to be a free-flowing, non-caking product designed for use in formulated compounds. Further information may be obtained on request to E. I. du Pont de Nemours & Co., Grasselli Chemicals Dept., Wilmington 98, Del.

New Penta Emulsifier

A new cationic surfactant designed specifically for emulsification of pentachlorophenol in water was announced recently by Armour & Co., Chicago. For emulsifiable concentrates containing up to 15 percent pentachlorophenol, one to five percent emulsifier is used. The concentrate is prepared by heating the mixture of pentachlorophenol and a solvent to form a solution to which the emulsifier is added. Before application the end user adds the concentrate to water. When prepared with "Emulsifier 1990-A" the concentrate produces a flash dispersion in water without mechanical agitation. Besides flash dispersion the Armour product is said to produce emulsions stable in hard or soft water. Technical bulletin No. G-8 supplying full data on the new penta emulsifier is available from Armour's Chemical Division.

— ★ —

ADM Has New Alcohol

"Adol 32," a straight-chain, unsaturated monohydric alcohol with one double bond and one hydroxyl group, was introduced recently by Archer-Daniels-Midland Co., Cleveland. An almost water white oily liquid with mild fatty odor, the product is said to be non-corrosive, soluble in a variety of solvents, and miscible with fats, fatty acids, petroleum oils and waxes. "Adol 32" is suitable for use as a superfatting agent, in detergents, and as an emollient. Suggested applications include among others surfactants, soaps, germicides, emulsifiers, and sulfonates. The material is shipped in drums or tank cars. Further information may be obtained by writing ADM's Chemical Products Division at 2191 West 110th Street, Cleveland 2.

— ★ —

New Ellis Literature

George D. Ellis & Sons, Inc., Philadelphia, recently issued a new technical data sheet which describes size and capacity data for a variety of cans for packaging, storing or shipping dry, semi-liquid and liquid products. Containers are available

in a choice of screw tops or slip covers. They also are equipped with large diameter openings and curled edges as a safety factor, according to Ellis. Copies of the new data sheet may be obtained on request to George D. Ellis & Sons, Inc., American and Luzerne Sts., Philadelphia 40.

— ★ —

Skin-Toxicity of Fungistats

"Cutaneous Toxicity Evaluation of Fabrics Impregnated with Anti-Mildew Agents," by M. V. Shelanski and Charles Josephs, Industrial Toxicology Laboratory for Wright Air Development Center, U. S. Air Force, 1955, 22 pages, order PB 111800 from Office of Technical Services, U. S. Department of Commerce, Washington, D. C., price 75 cents. Fabrics impregnated with certain anti-mildew agents were studied by the prophetic patch test method on laboratory animals and volunteer human subjects to determine the primary irritant effect and the sensitization index of the impregnated cloth. Studied were fabrics impregnated with 1,3-difluoro-4, 6-dinitro benzene; 1-fluoro-3-chloro-4, 6-dinitro benzene; 1-fluoro-3-bromo-4, 6-dinitro benzene; 1-fluoro-3-methyl-4, 6-dinitro benzene; 3,3'-difluoro-4,4'-dihydroxy biphenyl; 3,3'-5,5'-tetrafluoro-2,2'-dihydroxy biphenyl; 5,5'-difluoro-2,2'-dihydroxy biphenyl; Bis-(2-hydroxy-5-fluoro biphenyl) sulfide. Fabrics impregnated with halogen substituted dinitrobenzenes elicited many strong reactions as evidence of primary irritation on human subjects. They were not recommended for use on any material which would contact the human skin.

— ★ —

Polak Names Two

Polak's Frutal Works, Inc., Middletown, N. Y., recently announced two additions to its staff. George Charles Coquel has joined the firm's perfume laboratories and William H. Kanninen the flavor laboratories. Mr. Kanninen was previously associated with Foster D. Snell, Inc., New York.

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Any Cap — Any Container — Perfect Sealing!
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New Books

Hilditch in New Edition

The Chemical Constitution of Natural Fats by T. P. Hilditch, Professor Emeritus of the University of Liverpool, England. Third revised edition, May 1956, John Wiley & Sons, Inc., New York. Cloth bound, 664 pages, 9¾ inches by six inches, price \$16.00. The new edition of this classic retains the basic plan of its predecessors, the original 1940 and the second revised 1947 editions. However, the work has undergone great additions and alterations to embrace recently acquired knowledge of natural fats and their components. A measure of the strides made in this field can be obtained by comparing the number of component acid records in the chapters dealing with component acids of fats of marine, mammal, and vegetable origin. About 600 fats from plant species are included in the current edition compared with 400 in 1940, 200 from land animals compared with 80 in the original edition, and about 200 fats of aquatic origin against 100 in the first version.

Methods of study of the glycerides in liquid fats have been developed so that it is now possible to present a fairly complete picture of glyceride structure over the whole range of natural fats. The three chapters dealing with component glycerides have been rewritten to take account of this development. Chapter V is now devoted to a detailed general survey of glyceride structure based upon experimental procedures, ranging from the mainly qualitative studies prior to 1927 to the subsequent more quantitative investigations based at first on chemical methods and latterly and increasingly on physical methods of partial resolution of the natural fats into simple mixtures of mixed glycerides. Chapters VI and VII deal with the component glycerides of individual vegetable and animal fats. Chapter IX

on the constitution of individual natural fatty acids has been largely rewritten in the light of the great advances made in the knowledge pertinent to this field. Chapter XI on experimental techniques used in the study of fats, has been altered to emphasize the newest procedures, especially the use of crystallization from solvents at low temperatures, and of spectrophotometric determination of certain unsaturated acids.

Polyester Survey

Polyesters and Their Applications by Johan Bjorksten, Henry Tovey, Betty Harker, and James Henning of Bjorksten Research Laboratories, Inc., Madison, Wis. Published May 1956 by Reinhold Publishing Corp., New York. Cloth bound, 618 pages, nine inches by six inches, price \$10.00.

This volume comprehensively surveys the polyester field from raw materials to fabricated product. Included are data as available June 1, 1954 with some later references published in a supplement section at the end of the book. Text and annotated bibliography of over 3300 references cover most phases of the production and use of polyesters. The authors expect to publish supplementary information as it becomes available.

New Carbide Bulletin

A new 64-page booklet "Ethers and Oxides" has been published by Carbide and Carbon Chemicals Co., 30 E. 42nd St., New York. The bulletin gives data on physical properties, solubilities, applications and uses, shipping, specifications and test methods, and other pertinent information on 32 different products. A list of literature and patent references for individual products is an important feature of the new booklet.

Ethers and oxides are used as solvents in the manufacture of cleaning compounds, surface coatings and many other products. Their range of applications includes intermediates in the manu-

facture of surface active agents, insecticides, fumigants, corrosion inhibitors, and others.

New Becco Bulletins

Three new long-chain epoxidized olefins developed by Becco Chemical Division, Food Machinery and Chemical Corp., Buffalo, N. Y., are described in technical bulletins Nos. 72, 73, and 74. These compounds are suggested for use as corrosion inhibitors and surface active agents. The brochures describe structure, properties and chemical reactivity and supply use information on each of these compounds.

Defines Research Role

A. C. Cagney, industrial soap field manager of Procter & Gamble Co. of Canada, Ltd., Toronto, spoke at the annual convention of the Alberta-Montana-Idaho Laundry and Dry Cleaners' Association which met in Calgary last month. His talk was entitled "Leave Less to Luck." Tracing the technical advances in the dry cleaning and laundry industries he stressed that today experimentation is a job for the specialist whose services are at the disposal of every plant owner. These technical services are provided by the supplier of cleaning materials and specialties and of equipment who retains a group of research and development experts. Suppliers will regulate washing formulas, train washmen, check washing quality, train operators in the most efficient use of equipment, etc. Plant management is thus left free to devote itself to the problems of selling and servicing its customers.

New ADM Alcohol

A new hydroxy stearyl alcohol was introduced last month by Archer-Daniels-Midland Co., Minneapolis. "ADOL 45" is a long chain diol with high melting point and two OH groups. It is suggested for use in detergents, germicides, waxes, and other specialties. The product is made at ADM's new plant in Ashtabula, O.

CaPeM SCREW CAPPERS

Speed production for Texize Chemicals, Inc.



This Model D-6-F Rotary CaPeM increased production to such an extent that Texize Chemicals, Inc., Greenville, S. C. recently ordered a duplicate. This completely automatic line is operated continuously at production rates in excess of 200 bottles per minute.

CaPeM Screw Cappers apply all types of metal and plastic screw caps to jars, bottles, cans and jugs ranging in size from 1 oz. to gallons. Speeds range from 40 to 300 containers per minute. Write for complete information.

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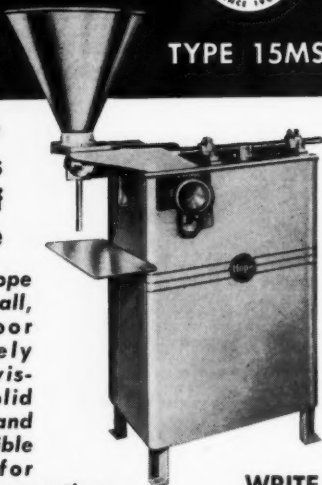
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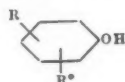
475 Fifth Avenue

New York 17, N. Y.

NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, Mac Nair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be \$1.00 per copy.

No. 2,746,927. Low Foaming Detergents, patented by Manuel N. Fineman, Philadelphia, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa. A low-foaming composition is described consisting essentially of 7 to 25 parts of an alkylphenol of the formula wherein R is an alkyl group



of eight to ten carbon atoms and R^o is selected from the class consisting of hydrogen and alkyl groups of not over ten carbon atoms, and 93 to 75 parts of an alkylphenoxypolyethoxyethanol having an alkyl group of 7 to 12 carbon atoms and having 8 to 30 ether groups, the total parts being 100 by weight.

No. 2,746,928. Germicidal Detergent Compositions patented by John L. Darragh, Alamo, and Gordon B. Johnson, Berkeley, Calif., assignors to California Research Corp., San Francisco. The patent discloses a germicidal detergent composition consisting essentially of 70 to 99.5 parts by weight of an organic anionic detergent of the group consisting of water-soluble alkali metal salts of an organic sulfuric reaction product having in its molecular structure a higher molecular alkyl radical of from 8 to 18 carbon atoms and a radical selected from the group consisting of sulfonic acid and sulfuric acid ester radicals and 0.5 to 30 parts by weight of a quaternary ammonium germicide halogen complex consisting of from about 0.01 to about 1.0 mols of physically-bound elemental iodine per mol of quaternary ammonium germicide which are determinable by thiosulfate titration, and a quaternary ammonium germicide of the group consisting of long-chain alkyl dimethyl benzyl quaternary ammonium halides, long-chain alkyl benzyl di-ethyl ethanol ammonium halides and long-chain alkyl benzyl trimethyl ammonium halides, said

complex being substantially free of unbound halogen as demonstrated by its failure to form halogen amines when exposed to ammonia vapors.

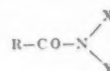
No. 2,746,930. Process for Making Detergent Compositions, patented by Louis E. Wells, Jr., and Henry V. Moss, Anniston, Ala., assignors to Monsanto Chemical Co., St. Louis, Mo. The patent teaches a process of increasing the retentivity of a finely divided inorganic hydratable alkali metal detergent builder for an oily detergent of the polyglycol ether type, which consists essentially in gradually adding an aqueous medium to said builder while mixing the latter in the finely divided solid state with said oily detergent in an amount varying from about 0.1 part to about 1 part of said oily detergent for each part of said builder, said aqueous medium supplying water only in an amount sufficient to form a hydrate of said hydratable alkali metal detergent builder and said water incorporated with said aqueous medium being retained in said mixture as the hydrate of said builder.

No. 2,748,070. Electrical Lubrication of Detergent Shaping Devices, patented by Robert C. Head, Glendale, Ohio, assignor to The Procter and Gamble Co., Ivorydale, O. In the process of extrusion of plastic bar of detergent composition consisting essentially of soap high in mechanically produced beta phase and containing also soap in the unsolidified neat soap phase, said detergent compositions being in a condition of pasty cohesiveness, the steps of establishing an extrusion temperature within the beta-forming region and above the temperature range in which smooth surfaced soap is obtained in absence of electrical lubrication are covered and passing a direct electric current at a potential not in excess of 400 volts across the interface between the extrusion orifice and the extruding soap at a current density of 0.2 to 25.0 amperes per square inch of electrically conducting interface at a rate of 0.1 to 10.0 coulombs per square foot of extruded bar surface, to produce an extruded soap having a smooth surface.

No. 2,748,084. Method for Cleaning Carbonaceous Material and Soil From Surfaces, patented by Earl R. DuLew, Corte Madera, and Fred G. Michaelis, San Francisco, Calif., assignors to Yosemite Chemical Co., San Francisco. A method of cleaning electrical equipment dirtied with soil including carbonaceous material and graphite is revealed which comprises wetting said equipment with an emulsion of water and a grease solvent in which emulsion the water is the dispersed phase, said grease solvent comprising a mixture of hydrocarbons and halogenated organic compounds which are immiscible with said water, the amount of water in

said emulsion being approximately 1% to 20% by volume of the total volume of said water and said solvent, and said emulsion containing an emulsifying agent free of amine groups and incapable of conducting electricity in the amount of from about 2% to 8% by volume of the total volume of said emulsion, allowing said emulsion to penetrate said soil to loosen the graphite by interfacial tension between the solvent and the water, and subsequently subjecting said equipment to a fresh amount of said emulsion.

No. 2,746,931. Synthetic Detergent Compositions patented by Peter T. Vitale and Muriel Eileen Liftin, Brooklyn, N. Y., assignors to Colgate-Palmolive Co., New York. A detergent composition is covered comprising from about 10 to 50% by weight of water-soluble higher alkyl mononuclear aryl sulfonate detergent, in minor proportion thereto and from about 1 to about 10% of each by weight of a higher aliphatic alcohol of about 12 to 18 carbon atoms and a higher amide compound having the formula:

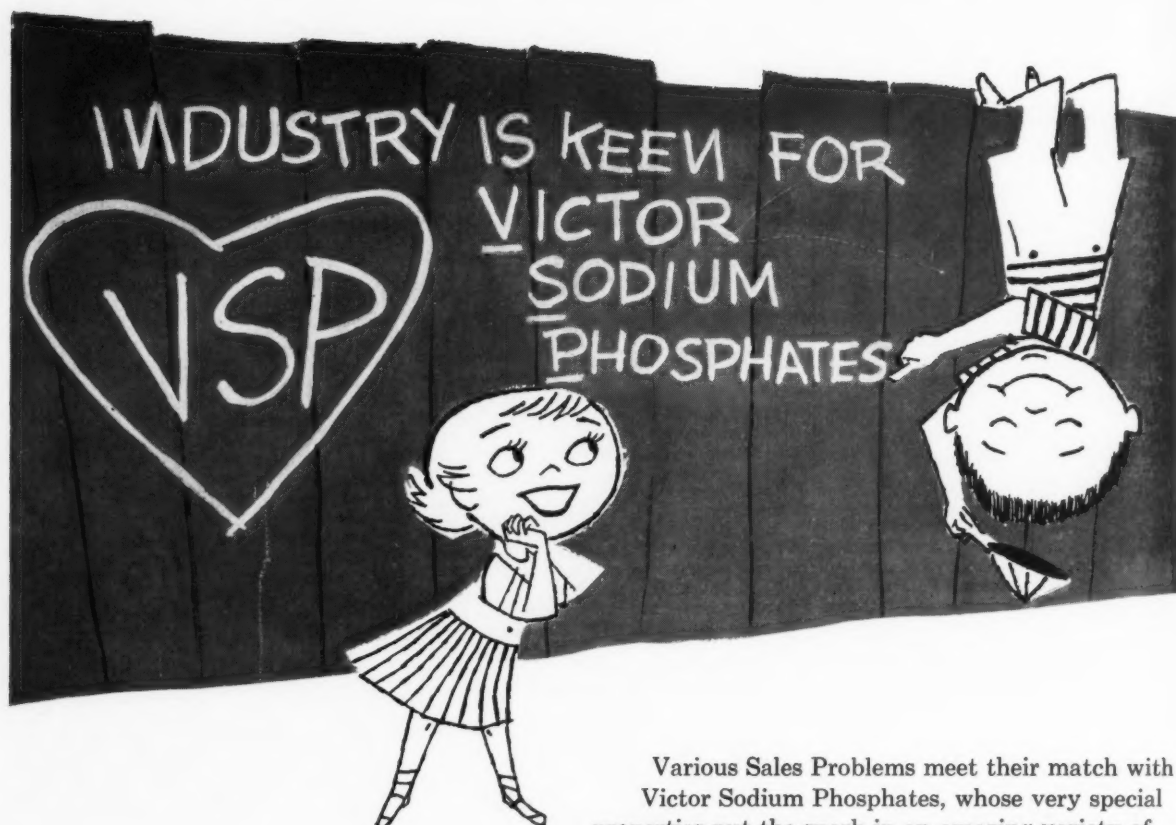


wherein R—CO—is an aliphatic acyl radical of about 10 to 20 carbon atoms, and X and Y are each selected from the group consisting of hydrogen and alkyl radicals having up to 5 carbon atoms, and the balance being primarily a mixture of water-soluble inorganic sulfate and phosphate salts.

No. 2,746,932. Synthetic Detergent Compositions, patented by Peter Tamburo Vitale, Brooklyn, N. Y., assignor to Colgate-Palmolive Co. A cleansing and laundering composition is patented consisting essentially of about 20 to 50% by weight of water-soluble higher alkyl aryl sulfonate detergent salt, about 1/2 to 10% by weight of a primary saturated fatty alcohol of 14 to 18 carbon atoms, and the balance being primarily a mixture of water-soluble inorganic sulfate and phosphate salts, said composition exhibiting improved soil removal upon washing of textile materials at a concentration of 0.4-0.75% in water.

No. 2,746,929. Process for Making Detergent Compositions patented by Louis E. Wells, Jr., and Henry V. Moss, Anniston, Ala., assignors to Monsanto Chemical Co., St. Louis. The process is revealed of increasing the retentivity of a finely-divided inorganic hydratable alkali metal detergent builder for an oily detergent derived from the condensation of an alkylene oxide with a mercaptan containing at least 6 carbon atoms, which consists essentially in gradually adding an aqueous medium to said detergent builder while intimately mixing the latter in the finely divided solid state with said oily detergent in an amount varying from about 0.1 part to about 1 part of said oily de-

(Turn to Page 99)



Various Sales Problems meet their match with Victor Sodium Phosphates, whose very special properties put the spark in an amazing variety of otherwise ordinary products. Better performance . . . faster sales . . . even competitive advantages are frequently your dividends.

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Products and PROCESSES

Improved Polish

Improved stability is claimed for a polish comprising one to 10 parts of a saturated fatty acid having 12 to 18 carbon atoms, 0.07 to four parts of an alkali hydroxide or sodium borate, two to 99 parts of white spirit or a vaporizing oil, 0.5 to 20 parts of silicone fluid (e.g., dimethyl silicone polymer) one to 98 parts of water, and 0.5 to five parts of a non-vaporizing dispersing agent. This composition is suitable for polishing non-absorbent surfaces. Brit. patent 744,403, Kayelf Industrial Products, Ltd., through *Mfg. Chemist*, May 1956.

Bar Form Detergent

Detergents suitable for use in bar form contain a phosphoric acid having a hydrocarbon radical of more than 4 carbon atoms linked directly to the phosphorus atom of the acid or a compound in which a phosphonic acid complete ester group and a partial ester group are linked at their phosphorus atoms by a polymethylene group, and optionally an ester of orthophosphoric acid. Proosphoric acid and/or its partial ester are preferably in the form of an alkali metal, NH_4 or amine salt. Brit. patent 742,534, Metallgesellschaft A. G., Germany.

"Talking" Toothpaste

"Vademecum" toothpaste, made by Barnaengens Tekniska Fabrikers A/B, Stockholm, Sweden, now comes in a talking package. This is how it works: when opening the box the user finds a green plastic tape in addition to the tube of toothpaste. Directions instruct him to make a knot in the tape and insert it in a slot in the box. He passes the nail of his index finger along the tape while holding the box in the other hand and he hears plainly the words "Tag Vademecum!" (Take Vademecum).

The tape has sound grooves like a phonograph record and the vibrations are transferred to the box and amplified. The slogan is clearly audible although it sounds as though played by an ancient portable phonograph. *Chemische Industrie*, Packaging Section, May 1956, p. 62.

"Freon" Cleans Film

"Freon-113," made by E. I. du Pont de Nemours & Co., Wilmington, Del., generally used as an aerosol propellant and refrigerant, has been found to clean photographic films rapidly and safely, according to tests reported by the Motion Picture Research Council, Inc. The compound is said to speed up film cleaning 10 to 20 percent in machine or hand cleaning, "Freon-113" is said to dissolve gum and oils without affecting the emulsions on either black and white or color films.

Acid Guanidine Soap

Acid guanidine soap is formed by equimolecular addition of stearic acid with guanidine stearate in organic solvents. Recrystallization from organic solvents (e.g., acetone-methanol) showed no change in the composition and properties. Melting point is $71.3-72.9^\circ$, the formula $\text{RCOO} \cdot \text{C}(\text{NH}_2)_3 \cdot \text{RCOOH}$. Jiro Mikumo, Yoshio Mitsui, and Toru Kusano, *J. Chem. Soc., Ind. Chem. Sect.*, 58, 595-6 (1955), through *J. of Am. Oil Chem. Soc.*

Detergent Carton Ink Test

Colors used on detergent packages must be fast to water and to the wash liquor. Contact with either is almost inevitable. In the absence of fastness the wash will be stained. It is usual for the detergent manufacturer to safeguard himself by testing the proposed printing inks very thoroughly. So

far each manufacturer has had his own test method. A test method has now been evolved by a technical committee of the (German) Association of Printing Ink Manufacturers and it is hoped that this test will be accepted as standard by the German Standards Committee. It will then be suggested that the makers of detergents, and of printing inks, as well as printers and suppliers of paper and cardboard will adopt the standard and adhere to it.

Nearly all detergents contain substances which attack colors. Binders in the inks may be affected, coloring matter or the paper or cardboard may be attacked.

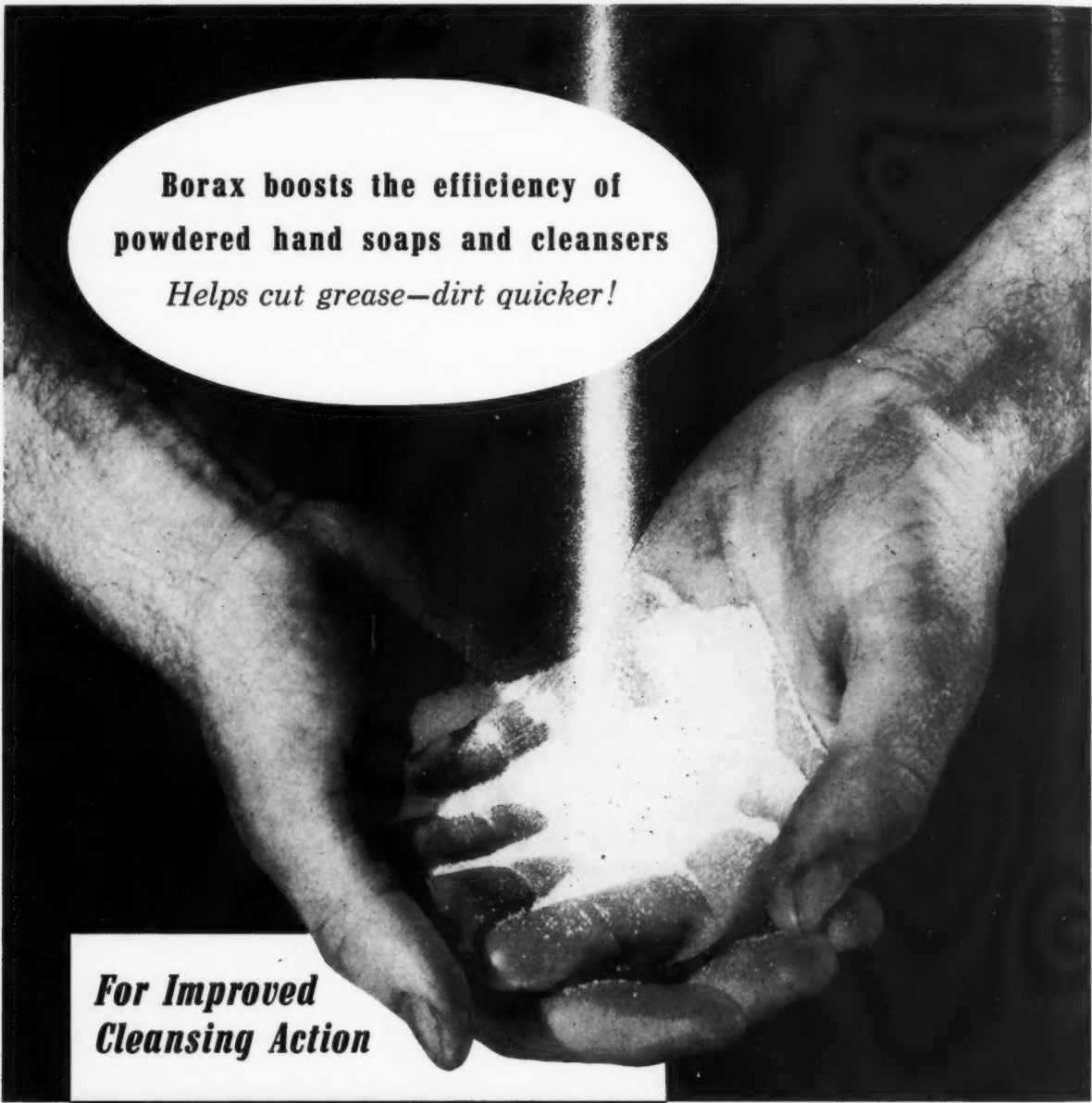
Alkalies present in the washing compound may cause the degradation of the binders in the ink and formation of water soluble rosin soaps and oil soaps. These water soluble compounds cease to bind the coloring matter. Upon contact with water the colors are washed out and stain linens. Book and offset printing inks cannot be made without such saponifiable binders. However, entirely alkali-stable pigments exist for the coloring substance but the detergent manufacturer often makes their use impossible by insisting on shades which do not exhibit such reliable alkali stability. The manufacturer should make concessions in this department in his own interests.

It is obvious that the corrosive ingredients of the detergent can destroy papers and cardboards. Such destruction does not only alter the optical effect of the colors but also their adhesion characteristics. *Chemische Industrie*, Packaging Section, May 1956, p. 63.

Bacteriostatic Oils

Several Indian essential oils, especially lemongrass oils, were tested for bactericidal efficiency by several standard tests. Notable reduction in germicidal activity was observed in the presence of organic matter. Antibacterial activity of lemongrass oil was measured and

(Turn to Page 177)



**Borax boosts the efficiency of
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Helps cut grease—dirt quicker!

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**NOW AVAILABLE TO YOU IN SPECIAL UNIFORM MESHES
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To make your powdered hand soaps and cleansers work better in any water, *add BORAX!* It makes all water feel velvety soft; makes any powdered soap more effective. A Borax-Soap combination cuts through grease and dirt like magic! You'll find our granular Borax is just right... free-flowing, 100% soluble, free of grit. *Write for Bulletins and Samples.*

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SOAP and CHEMICAL SPECIALTIES

PRODUCTION *Clinic*

By **E. G. Thomssen, Ph.D.**

GOOD community relations are of ever-increasing importance to industry. The fostering of such relations pays ample dividends in better relations with unions, improved quality and quantity of production, less absenteeism, reduced labor turnover, and absence of adverse or restrictive legislation. But every community will resent the presence of a plant which offends by causing dust, unpleasant odors, water pollution, unsightly factory grounds, and noise. Such offenses and possible hazards to public health will bring restrictive legislation and many other unpleasant consequences.

Travelling recently through a heavily industrialized area I noted the condition of plant exteriors and grounds. I had just read a newspaper article entitled KAB, which stands for "Keep America Beautiful." This movement is supported by manufacturers whose products are common sources of litter in public places, such as candy, cans, bottles, jars, paper, cigarettes, etc. 86 percent of the public is said to favor anti-litter laws already passed in over 40 states.

Making an actual check, I found that one plant in three exhibited an unsightly exterior. A large proportion of the offending plants make products which depend on cleanliness for their markets, including soap and sanitary chemicals. Others make food and food handling equipment.

In some instances the office grounds were attractive but the adjoining factory buildings which house production and shipping facilities looked shabby and dirty. Why an office is so often kept more attractively than the plant and its surroundings, is hard to understand.

First impressions of a manufacturing plant doubtless affect

the worker and also the consumer's opinion of the products made by the plant. It is good to maintain offices which are pleasing and comfortable. Yet if some of the outlay for office decoration, furniture and other amenities were used for the improvement of plant appearance it might conceivably pay larger dividends. A factory worker entering a yard full of weeds, paper, and haphazard piles of junk and weatherproof materials is not inclined to be neat himself. Buildings with dirty, often broken and unpainted windows depress his morale still further. Probably the entrance of such a plant is unsightly and if the exterior is sloppy, the chances are that the interior is disorderly as well. Such conditions do not only create poor morale in the employee. They deprive a man of his pride which results in loss of quality and quantity in his output. Furthermore, occupants of homes located close to an unsightly plant will seek to enforce greater neatness through the official machinery of their community.

Recently I noticed a complaint sent to a newspaper by a man who had moved into a town which relies for its livelihood largely on one big plant. This plant

was creating a dust nuisance and the writer took the company to task. A day or two later an official of the company answered sarcastically that, though offensive to one individual, the dust meant bread and butter for the city. This attitude is out of date. Today numerous large corporations are spending much effort and time on making their cities healthier and cleaner by proper disposal of waste and trash. These same organizations conduct successful and prosperous operations not only in orderly offices but also in orderly plants.

Why larger organizations usually maintain attractive buildings and grounds and smaller plants are frequently offenders in this field is hard to understand. Small plants are usually compact, employees are close to management, and sometimes there is quite a bit of slack labor. Owners are usually energetic and take pride in their product. Yet they permit their plant and its surroundings to become untidy. Upkeep expenses can hardly be the reason. It is cheaper to maintain yard and plant in good condition if they have never been allowed to get dirty, than to restore a neglected factory.

Many members of our industry feature a sanitation service which keeps the interiors of public buildings clean, takes care of washrooms, office buildings, etc. But we have never heard of a firm which offers such a service to keep the exteriors of factories clean and tidy. Yet there are many points which should sell such a service. Production men are often too busy to attend to plant appearances but if they are convinced that production, labor and outside relations are helped by neatness they will become sold on it.

The KAB movement is gaining momentum. By cooperating, the plant owner derives also indirect benefits. By setting an example in his own province he will encourage cleaner highways and public areas, thus reducing taxes

Dr. E. G. Thomssen





Like a claw, Dow chelating agents firmly grasp and hold metal ions in solution, preventing them from undergoing the usual chemical reactions. But why so many Versene products? Are they effective on all metallic ions? We hope this continued discussion provides the answers, and further clarifies what chelates will do—and won't do.



The Chemistry of Chelation: Part III

Specific agents for specific conditions • Caustic solutions
Changing solutions • Industry responds

In all, Dow offers 15 commercially available chelation products. These are grouped in the Versene®, Versenol®, and iron specialty (Versene Fe-3 Specific®, Versene T®, Versene S) series. The Versene and Versenol series were discussed in Part II of this advertisement. When used in solution, the Versene products inactivate practically any polyvalent metallic ion they contact. They accomplish this by actually forming a new compound in which the metal ion becomes a member of a stable inner ring structure in the molecule, so that no reversion or breakdown can occur. However, no one chelating agent can complex all metal ions under all conditions. One of the major considerations determining which chelating agent to use is pH. To illustrate, let's look at iron-containing systems, among the most troublesome for chemical processors.

SPECIFIC AGENTS FOR SPECIFIC CONDITIONS

The first amino acid type chelate made commercially available was Versene, the tetrasodium salt of EDTA*. It is the most versatile member of the series for it ties up most polyvalent metal ions throughout the pH range—with this notable exception: It is excellent for complexing iron in the acid range only. For economy above pH 7, we must look to a later development, Versene Fe-3 Specific.

The most effective and efficient agent known for complexing iron in the mildly alkaline pH range, Versene Fe-3 Specific also chelates copper, nickel, and cobalt—but has no effect on calcium, magnesium or other common non-transition metal ions. Where calcium and magnesium along with iron cause difficulty in alkaline solutions, a blend of Versene and Versene Fe-3 Specific is the answer. This mixture, called Versene Fe-3, complexes all of these troublesome ions. Its Versene Fe-3 Specific content is sufficient so as to automatically take care of the quantity of iron normally encountered in hard water.

Versene Fe-3 is also considered an important adjunct to the polymerization of synthetic rubber. It controls the concentration of the iron ions catalyzing the reaction, thus insuring a more-uniform, higher-quality end product.

CAUSTIC SOLUTIONS

For chelating iron in caustic solution, another agent enters the picture—Versene T. This material ties up iron in a wide range

of caustic solution concentrations. It also complexes calcium, magnesium, nickel, cobalt, and other metal ions—throughout the normal pH range as well as in caustic solutions. In the presence of a suitable reducing agent, Versene T functions effectively as a rust remover—and without the drawbacks of acid cleaners. Versene T thus finds widespread use in boiler and heat exchanger cleaning, textile processing, etc.

Another effective chelating agent that is selective for iron in the free caustic pH range is Versene S. Since it will not chelate alkaline earth ions, Versene S is especially suitable for use in silicate-lined textile processing kiers.

CHANGING SOLUTIONS

In special instances where a processing solution is strongly alkaline at first, then changes to neutral or to acidic, iron can be controlled with a mixture of Versene T and Versene Fe-3 Specific. In this combination, the Versene T component complexes the iron when the solution is caustic. As the pH drops, Versene Fe-3 Specific takes over.

INDUSTRY RESPONDS

Every day, Dow chelates are finding new and expanding usage—in textile manufacturing and rubber processing, in soaps, synthetic detergents, cosmetics, and pharmaceuticals. Their ability to control ionic concentrations, to eliminate product breakdown, to smooth out production and save money, has brought enthusiastic response from industry. That they are solving a multitude of processing problems is true. But chelates are no cure-all. To uncover their profitable uses, we will help in any way we can. Write us on your company letterhead for application data and technical assistance. Technical Service and Development, Department SC 913H, THE DOW CHEMICAL COMPANY, Midland, Michigan.

*Ethylenediaminetetraacetic acid

THE NEXT TOPIC IN THIS SERIES

PART IV
October

Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

you can depend on DOW CHEMICALS



now spent in cleaning up the litter.

Synthetic Waxes

"E"POLENE" synthetic wax, now available from Eastman Chemical Products, Inc., Kingsport, Tenn., comes in two forms. "Epolene E" is emulsified and designed for incorporation in polishes and wax coatings. The non-emulsifiable type "Epolene N" may be blended directly with paraffin and other materials. These low viscosity waxes come in pellets which readily melt down to blend with other substances. Samples and detailed information are available from the manufacturer.

Paint Remover

METHYLENE chloride should be investigated by anyone interested in a paint removing solvent. Offered by Solvay Products Division of Allied Chemical & Dye Corp., New York, this solvent is non-flammable, fast-acting, non-corrosive, harmless to wood, has low toxicity, and is suitable for use in pressure packages.

Bag Packer

AN automatic open mouth bag filling machine is featured by Kraft Bag Corp., New York. The device, called "Kraftpacker," is designed to handle free flowing materials. Low in purchase price, the machine is easily installed, costs little to maintain, and is said to reduce packaging costs considerably.

Suspending Agent

"C"ARBOPOL 934" is a suspending and thickening agent offered by B. F. Goodrich Chemical Co., Cleveland 15. The product is said to prevent even heavy and dense materials from settling out of aqueous suspensions. Samples and technical data are available from the manufacturer.

"Claw" Type Propeller

Craddock Equipment Co., 1507 A Street, Wilmington, Del., is offering its "Claw" mixing pro-

pellers as a special feature in its own "Mixall-Mixers" or separately for the improvement of existing propeller mixers. Craddock's own mixing machines are designed for the handling of all fluid products.



A wide variety of models is available with rpm ranging from 1725 to 1140.

Stock diameters in which the three-blade propeller itself is available range from three to 12 inches; additional and larger sizes come to order. The claw propeller is said to speed solubilization of powders and other soluble solids and to dissolve smoothly solids which have a tendency towards agglomeration.

Specifications of the propeller and specifications and performance data on the mixing machines are available from Craddock Equipment. Head of the organization is F. L. Craddock who originated in the early 1920's the electric portable propeller type mixers and off center side entering propeller mixers and agitators. Mr. Craddock was president of Mixing Equipment Co., Rochester, N. Y., until 1939, when he sold his interest in the firm to its present owners.

New Blending Catalog

Dry blending and heat transfer equipment is described in the new revised 16-page catalog published last month by Patterson-Kelley Co., East Stroudsburg, Pa. The illustrated brochure covers the p-k laboratory and production models of standard and special twin-shell, double cone and ribbon blenders; standard and special process heat exchangers; the lever-lock

quick opening door for pressure vessels and heat exchangers; and other equipment. New additions to the line are liquid feed twin-shell blender for adding liquids to dry materials, and the lever-lock door.

Stokes Improves Microvacs

The high vacuum equipment division of F. J. Stokes Corp., Philadelphia, recently announced an increase of 15 percent in the pumping capacity of its "Microvac" line of rotary mechanical vacuum pumps. The new displacement ratings are available from David E. Stokes, manager, market development, F. J. Stokes Machine Co., 5500 Tabor Road, Philadelphia 20, or from Frederick R. Brewster, account executive, John Mather Lupton Co., 420 Lexington Avenue, New York 17.

New Whittaker Catalog

Whittaker, Clark & Daniels, Inc., 260 W. Broadway, New York 13, N. Y., recently published a 204-page plastic spiral bound book describing the firm's line of basic materials for cosmetics and toilet preparations. The first part of the book, "Whittaker's Cosmetic Materials," covers general basic materials, essentially inert and light chemicals. These include talcs, kaolins, calcium carbonates, stearates, etc. Certified colors for cosmetics and toiletries are covered in the second part. The third section cross-lists the products by uses.

Dravo Process Bulletin

An illustrated four-page folder describing its line of large and special purpose process equipment for the chemical, plastic and allied industries is now available from Dravo Corp., Neville Island, Pittsburgh 25, Pa. Design and construction details are given for intensive mixers, liquid blenders, dissolvers, kneading machines, pressure filters, ball mills, conical blenders, quick-opening doors, pressure vessels and other types of process equipment. Copies of Bulletin No. 236 are available on request.

ALKYL ARYL SODIUM SULPHONATES

based on tetra propylene polymer

NANSA* brand

* **NANSA H. S. FLAKE**

80% dodecyl benzene sodium sulphonate

* **NANSA S. POWDER**

40% spray dried dodecyl benzene sodium sulphonate

* **NANSA LIQUID**

built alkyl aryl sodium sulphonate liquid

* **NANSA U. C. POWDER**

bead type totally spray dried synthetic detergents containing molecularly condensed phosphates, carboxy-methyl-cellulose, silicates, foam builders, etc.

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by high pressure hydrogenation

LAURYL ALCOHOL and homologues

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spray dried powder to U.S.P. & B.P. specification

TRIETHANOLAMINE LAURYL SULPHATE

for shampoos, toilet preparations and liquid cleansers

SODIUM LAURYL SULPHATE NEEDLES

non-dusty, for toothpastes, cream shampoos and industrial use

LAURYL ETHERS

emulsifiers, surface tension modifiers, coupling agents

LAUREX
BRAND

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AGENTS AND OFFICES IN PRINCIPAL CITIES OF THE WORLD

**CHEMICALS
BY**

Marchon

WHITEHAVEN-ENGLAND



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Manufacturers of

ORGANIC DIVISION: fatty alcohol sulphates (EMPICOLS), emulsifiers (EMPILANS), self-emulsifying waxes (EMPIWAXES), alkyl aryl sulphonates (NANSAS) and other detergent bases, additives and emulsifiers in powder, paste and liquid forms.

INORGANIC DIVISION: phosphoric acid and complex phosphates.

SOAP PLANT *Observer*

By John W. McCutcheon

A PORTABLE copying machine was demonstrated to the writer the other day that was quite interesting. It is called a "Contoura," is manufactured by F. G. Ludwig, Inc., Old Saybrook, Conn. New York address is Ludwig Photo Copy, Hotel Shelton, Suite 463, 527 Lexington Ave. The $8\frac{1}{2} \times 14$ " size sells for about \$200.00. It works on the "Land Camera" principle and in fact the company is licensed under the Land patents.

The machine consists of two parts, each in a carrying case of its own and weighing a total of around 15 pounds. In use, the paper to be copied is placed against a sheet of positive paper in the Contoura and the cover closed. The negative paper is rather insensitive to artificial light and no particular care need be exercised in an ordinary lighted room. A built in timer is set, generally for eight-ten seconds after which the box is opened, the negative removed and placed in the developer called a "Constat." A sheet of prepared positive paper is fed in the other side at the same time and both sheets pass through a developer solution and up between two rubber rollers. A handle rolls the paper through in about two to three seconds and the negative is removed and thrown away or filed for reference. The positive is on a firm sheet in black and white which is slightly damp and becomes bone dry in a few minutes or in the time required to transfer it to the mailing room. The whole operation resembles very closely the procedure of a "Land Camera" and anyone familiar with such equipment, will have no difficulty in visualizing just how the above works.

One particular feature of the machine is a plastic air filled cover over the bank of exposure lights, which holds the paper and



negative a short distance away and assists greatly in giving perfect contact. A page in a book for example may be completely copied by removing the "Contura" exposure meter from its case and placing it face down over the book. The air cushion of the plastic bag gives good contact in the center trough of the book. A page from the bound copy of *Soap & Chemical Specialties*, for example, was easily handled in this manner.

The positive and negative sheets are sold at 1.08 cents per pair of $8\frac{1}{2} \times 14$ " sheets which represents the principle cost of the "Contoura-stat" as it is called. Sheets may be cut in half, quarter, etc. as required and it is also noted that the finished copy which resembles a photostat, is on a fairly light tough paper which may be folded back and fourth without cracking and which may be written on with pencil or ink which is not possible with most photostats. Also available are transparent positives at \$18.00 per 100 pair of $8\frac{1}{2} \times 14$ sheets, film at \$29.10 and card stock at \$16.45. The transparencies and film are useful for example in making copies for photo offset, diazo or other forms of duplicating or for use in visual aid projection machines for lecture and demonstration purposes.

In summary, the writer feels that this equipment should be of great interest to technical men in the industry who require a few duplicate copies of many articles without the expense of having them typed and checked. The demonstration indicated that the equipment will do what it is claimed to do and will do it very well indeed.

To copy articles of interest quickly and accurately is of great importance to technical people. Although photo copying devices such as described above, are becoming more and more efficient, they still leave a lot to be desired. It would be a great advantage for example to have the transfer made with an artificially produced non-visible light so that the positives would not need to be kept in light-tight boxes and yet would be sensitive enough to such special light that copies could be made within a few seconds. Perhaps some reader may already have the answer to this problem or the means for obtaining such an answer. Eventually we may be able to copy anything we require by equipment we can carry safely in our vest pocket like a pad and pen!

DON'T pigeonhole the facts on automation. General industry is buzzing with the news and the road ahead is bound to be studded with the terms of this new technology. Equipment and process engineers must recognize the signposts or fall behind. One signpost is the trend to equipment interchangeability. The need for this stems from the fact that equipment generally is becoming more complex. To make a simple repair, often costs more money than to throw a complete unit away. In the electrical industry for example, this tendency is far advanced. Radio tube replacement is an example. Relays are built on the same principle and can be plugged in and out like a tube and changed at a moment's notice even by an unskilled person. We are not thinking here exactly in terms of standardization. The transmission on a car is standardized. Rather we are con-



CMC IN USE—Formula B19, a cold water rinse manufactured by Chloral Chemical Corp., 171 Lombardy St., Brooklyn, is being used here at the Midwood Laundry Corp., 2214 59th St., Brooklyn.

In Brooklyn's Largest Family Laundry THE KEY IS CMC

Many commercial laundry preparations—such as Formula B19—depend on Hercules® CMC to get clothes whiter, faster.

CMC provides the exceptional soil-suspending properties that result in dirt particles always going down the drain with the rinse, never redepositing on clothes. And CMC-based preparations are economical to use, drastically reducing the amount of hot water required.

Leading manufacturers everywhere—whether it be for commercial preparations for diaper, linen or family laundries or detergents and soap for home use—know the advantages of CMC. If you're among the few who have not tried CMC in your formulation, write Hercules for technical information. We'll also be glad to send a testing sample for your evaluation so you can see for yourself the difference CMC makes.

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VSS-2

fining our attention to interchangeability such as a spark plug or radio tube.

Automation requires delicate equipment. Much of it will be electrical because there is nothing that can travel as fast or turn so many corners as quickly as a string of electrons. The success of automatic systems will be proportional to the ease with which parts may be replaced. Some companies already recognize the importance of this aspect and are making instruments composed of standardized units that can be put together and taken apart by means of thumb-screws. System engineers will be giving many hours of serious thought to the use of equipment that can be replaced quickly and efficiently on standardized bases and supports. Such equipment would include, instruments, panels, control motors, valves, power relays, etc.

Required also to a still greater degree than at present will be the packaged units of the process engineer,—units that can be swung in and out of service at a moment's notice. For example, in a fat splitting operation recently noted by the writer, the high-pressure steam generation for the entire plant was handled by a packaged unit no larger than a three decked wagon box. Standing beside it, on the same foundation was a second duplicate unit ready for instant service when or if the first unit should break down; and they always do—in time!

THE April issue of the "Givaudanian" published by Givaudan-Delawanna, Inc., 330 West 42nd Street, New York 36, has an interesting article on "Fragrance and the Male Market." A few figures from this article collected from various surveys regarding the market volume may prove of interest here. For details and source the reader is referred to the original.

Estimated 1954 U. S. consumption:

Shaving creams (including aerosol creams)	\$50,750,000
Shaving sticks and soap	9,320,000

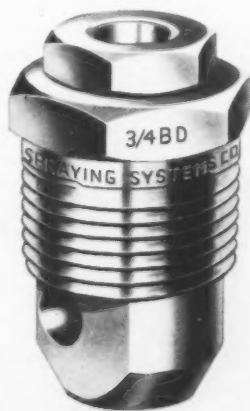
After shave lotion	30,320,000
Talcum	2,000,000
	<hr/> \$92,390,000

— ★ — **Cyclohexanone Bulletin**

National Aniline Division of Allied Chemical & Dye Corp., New York, recently issued a technical bulletin on its "Nadone" brand of cyclohexanone. The 32-page two-color brochure describes physical and chemical properties and principal chemical reactions. Seven pages are devoted to suggested uses and applications. These include, among many others, insecticide and fungicide sprays, herbicides, nonionic detergents, and certain perfume materials. The bibliography includes 178 literature references.

— ★ — **New Spray Nozzle**

A new "Whirl Jet" spray nozzle for installation on walls or manifolds has been introduced recently by Spraying Systems Co., Bellwood, Ill. Drilling or tapping holes in wall or manifold is simplified because these nozzles feature the outlet end directly opposite the inlet and can be mounted in a straight line. Available with $\frac{3}{8}$ inch and $\frac{1}{4}$ inch pipe connection, the nozzles provide a hollow cone spray. The absence of an internal core makes for clog free operation and after-drip is said to be kept at a minimum because the major portion of the nozzle is enclosed after installation and the condensation surface minimized.



D&O Price List

Dodge & Olcott, Inc., New York, has published the May issue of its catalog and price list. The 36-page pocket size booklet lists essential oils, aromatic chemicals and certified colors, gives prices and in many instances brief descriptions.

— ★ — **Revised "Promulgen" Data**

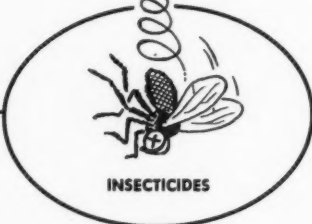
Robinson, Wagner, Co., 110 E. 42nd St., New York, recently published a revised technical bulletin on "Promulgen." The product is a nonionic o/w emulsifier, claimed to be resistant to hydrolytic agents, high salt concentrations and a wide range of pH conditions.

— ★ — **Ion Exchanger Book**

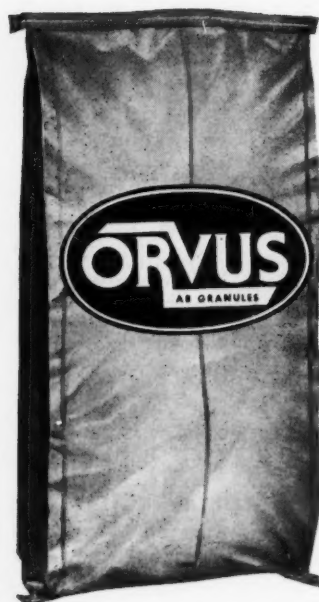
Synthetic Ion-Exchangers, Recent Developments in Theory and Application by G. H. Asborn, Macmillan Co., New York, June 1956, clothbound, 8½ inches by 5½ inches, 194 pages, price \$6.00. The first part of the book is devoted to the structure, preparation and general properties of ion exchange resins; performance data on commercially available resins; analytical aspects; reactions with materials of low solubility; ion exclusion; ion exchange membranes, and therapeutic applications. The commercially available resins described include the "Amberlites" of Rohm & Haas, the "Dowex" series and the "Permutit" resins. Over 100 pages are given over to a classified bibliography, which is divided into two major parts: applications and theoretical. The section dealing with applications is subdivided by subjects under which authors are listed alphabetically. The theoretical part lists references in the usual manner.

— ★ — **Germicidal Wash Powder**

A disinfectant washing powder contains a detergent, sodium carbonate and 0.02-0.10 percent of a halogenated 2,2-dihydroxy diphenyl methane or a salt. British patent 744,433, Ellendorf & Co., Germany.



All these can be Made Better with



You get smoother, more effective formulations with Orvus A. B. Granules. Formulations are smoother because Orvus AB flows freely and blends intimately with other ingredients every time. The strong structure of Orvus AB Granules keeps breakdown and dustiness to an absolute minimum. What's more, the surface of these granules is specially designed to reduce stratification, sifting and settling . . . to produce blends that are more uniform!

And formulations are more effective because Orvus AB is readily soluble in hot or cold water . . . has exceptional detergent, sudsing, wetting, dispersing and emulsifying properties. A 40% active synthetic detergent of the alkyl aryl sulfonate type, Orvus AB Granules give you *most* for your converter dollars. For information on specific applications or formulas, drop a post-card to . . .

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AMERICA'S LARGEST MANUFACTURERS OF TOP-QUALITY SOAPS AND SYNTHETIC DETERGENTS

Packaging...

AEROSOLS • LIQUIDS • PASTES • POWDERS

Novel packaging for its line of paradichlorobenzene deodorizing, moth control and mildew preventive sachets in unusual heart shape has just been adopted by Click Chemical Corp., Mount Vernon, N. Y. Shipping container (by Liberty Corrugated Container Corp., Brooklyn), unfolds into counter display. Two dozen individually packed para blocks in heather, honeysuckle and balsam scents come in each display container. Cellophane bags are printed by Milprint, Inc., Milwaukee, in three different colors, eight each to a carton. Individual bags retail for 25 cents each. Tassled cord for hanging in closets and other areas is attached to bags.

Automotive
Chemicals
Cleaners
Detergents
Deodorants
Disinfectants
Floor Products
Insecticides
Laundry Bleach
Metal Cleaners
Moth Products
Polishes
Shampoos
Shave Products
Soaps
Liquid Starch
Toiletries
and other
Chemical Specialties

*A market for over 20
billion packages annually*



CONTROL IS



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with Anchor Hocking!



Regardless of what you pack Anchor Hocking makes an Anchorglass container in a style, size and color to most attractively, efficiently and economically package it. And, to seal your glass-packed products, there are Anchor molded screw caps and metal screw, lug and vacuum types available—one or more of which will completely satisfy your diverse and specialized requirements.



THE controls applied throughout your production and packaging operations are all-important to you. By the same token, the manufacturing controls employed by Anchor Hocking are very important to you, also.

Anchor Hocking exercises literally hundreds of exacting controls, tests and checks daily in the manufacture of its glass containers and closures. From the selection of all raw materials used to the final inspection, every

operation is under meticulous control.

And all of this control, involving highly trained chemists, bacteriologists, engineers, other technicians and personnel, is done but for one reason. And that is, to provide you with uniform, high quality, dependable Anchorglass® containers and Anchor® screw, lug, vacuum, metal and molded closures that will give you high-speed, dependable production and protection.

ANCHOR HOCKING

GLASS CORPORATION Lancaster, Ohio



This is CONTINENTAL'S new *dedicated to the production of*

The product of the handsome building pictured here will be more rapid improvement of cans and packaging methods, for the immediate benefit of Continental customers.

This is the new multi-million-dollar research and development center of Continental's Metal Division, located in Chicago. It brings together under one roof 265 creative-minded scientists and engineers. With as many more technicians and assistants, they function as a closely knit team—in developing better materials, processes and machines—and in taking a fresh, new look at package design.

At their disposal are the most modern chemical, physical and engineering laboratories. Also contained in the 260,000 square feet of the center are complete pilot-plant facilities for checking out any individual proposal against considerations of cost, adaptability to present equipment, and good production practices.

Backing up the new center are other Metal Division laboratories at New York and Hayward, Calif., the Central Research and Development Division facilities in Chicago, which handle long-range experimental work, and 18 field laboratories across the nation.



research and development center

better cans and packaging methods



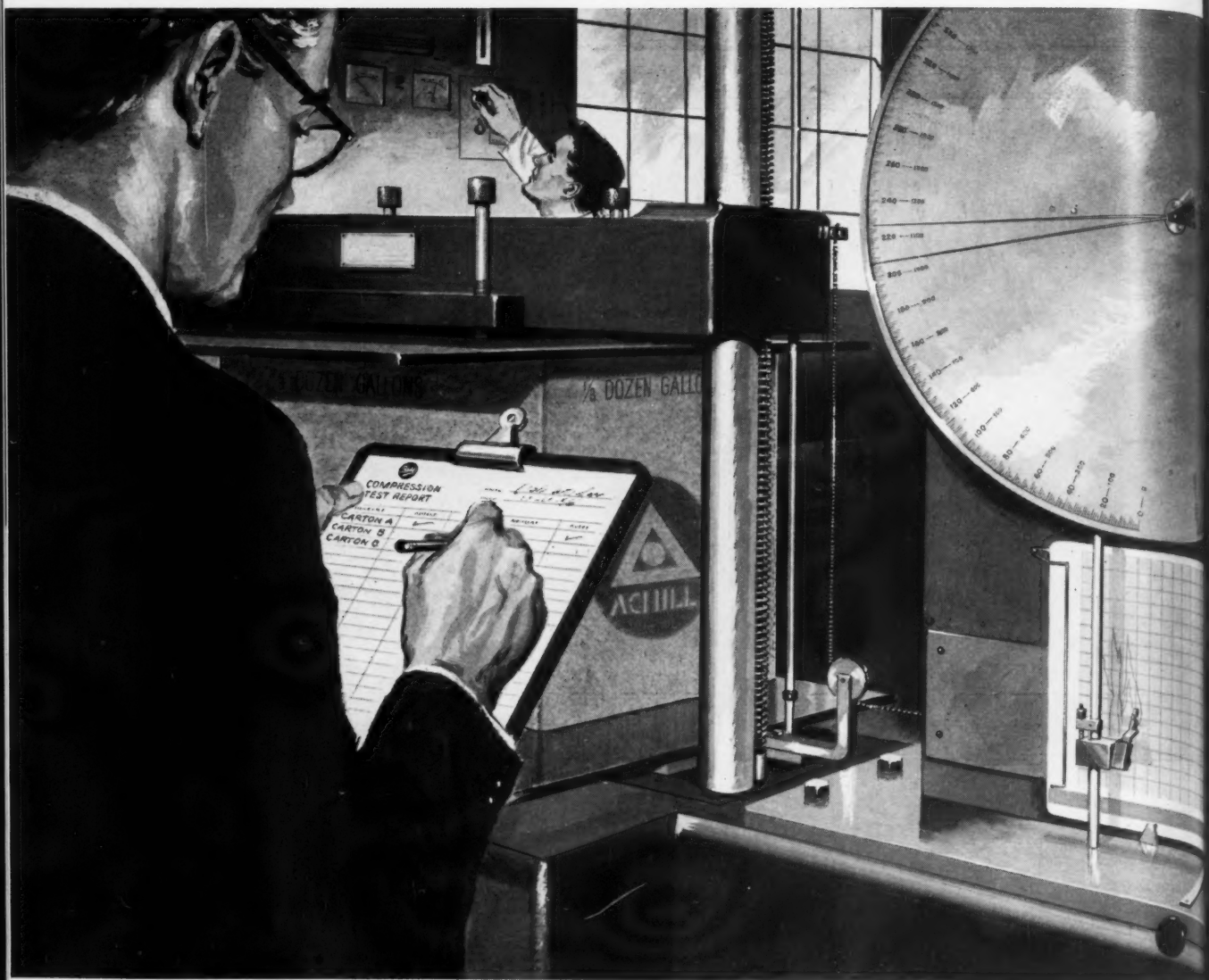
*To our friends in the
CHEMICAL INDUSTRY...
our doors and facilities are
always open to you*

New developments in chemical containers will come from Continental faster than ever, now that our new Metal Division research and development center is working for you. Expect more ideas like our Perma-Lining for steel containers—hot sprayed and baked in the finished container to cover every square inch of inside surface . . . also our liquid detergent cans—12-, 22- and 32-oz. with dripless $\frac{1}{2}$ -in. polyethylene nozzle, and 16- and 32-oz. with $\frac{3}{4}$ -in. nozzle.



CONTINENTAL © CAN COMPANY

Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4



Ball Brothers' *Personalized* Counsel can help you cut packaging costs

With operating costs increasing, every dollar saved on packaging is of greater importance than ever. This makes it vital to have shipping cartons for your products which avoid the waste of over-packaging or under-packaging.

Here Ball Brothers' personalized counsel can help you. Ball's practical packaging experts can develop shipping cartons for glass containers which will get your products to market safely . . . with a minimum of expense. For example, using equipment like the compression tester shown above, trained Ball technicians can accurately

predict the static load boxes will bear in warehouse stacks or on pallets. This special service has helped many users of Ball quality glass containers and metal closures to cut their costs. It is available to you through your Ball representative.

He can call on Ball's staff of industrial designers, engineers and technicians to aid you in solving your packaging problems . . . container design, processing, filling, shipping cartons, materials handling. These Ball specialists will provide sound practical recommendations that are tailor-made for your operations.

CALL



For more information about glass containers, metal closures and "PACKAGING-PLUS" services, write Ball Brothers Company, Dept. SC-76, Muncie, Indiana. Sales offices in all principal cities.

AND GET MORE THAN GLASS!

Packaging NOTES

New Continental Can Research Center



Equipment in new Continental Can research and engineering center includes this Callahan Gang Die Press. The machine utilizes coils of steel instead of sheet stock in the manufacture of can ends at high speed.

A NEW, seven million dollar research and development center in Chicago was formally dedicated by Continental Can Co., New York, June 14. Located at 76th Street and Loomis Blvd., in South Chicago, the center services the company's 41 plants in the metal division. Nearly 600 people—265 are scientists and engineers—are

working in the new laboratory for research and engineering on problems of new metal containers and non-metal components, new machinery to make and close the containers, and new products suitable for packaging in metal and related materials.

T. C. Fogarty, president of Continental Can Co., dedicated the

laboratories in ceremonies attended by company officials and employees of the laboratory. According to Mr. Fogarty, the research and development center is the largest and most advanced under one roof in the can-making industry. The three-story building was designed to meet the company's expansion needs in metal research and engineering over the next 25 years, Mr. Fogarty said.

The three-story building, with more than 260,000 square feet of floor space, is a fireproof structure of reinforced concrete beam and flat slab construction. The building is of low, modern design.

Except for the executive offices and main lobby, the air-conditioned center is without windows. The windowless construction permits greater use of space. Office, laboratories, and engineering sections will have three unbroken walls for equipment and work areas. Maximum interior flexibility is provided by hollow walls that can be easily moved to meet future research demands.

The building houses a modern 6,000 volume library, complete pilot areas for can-making and can-closing equipment, and advanced chemical, physical, and microbiological laboratories. Equipment has also been installed for designing, producing, and testing can-making and closing machines.

Continental Can Company's new seven million dollar research and development center in Chicago, which was de-

dedicated last month, services the company's 41 plants in the metal division. It has 260,000 square feet of floor space.



How to Save up to 6¢ per unit

on your
**AEROSOL
PRODUCT**



It doesn't take a very sharp pencil to figure the profit you are losing when you ship your aerosol product from an eastern or mid-western warehouse to the west coast. Depending on the method of shipment, it can easily add 2¢ to 6¢ per unit to the cost!

No longer is it necessary to sustain these losses. By taking advantage of G. Barr & Company's new Los Angeles aerosol filling plant, high transportation costs can be **EXTRA PROFITS** for you and your west coast customers need not wait days for merchandise to arrive from the east . . . it can be made in the same market as it is sold.

With three complete, strategically located plants available—New York, Chicago, Los Angeles—arranging your custom aerosol production can be simplicity itself. Only one management to deal with, yet all three plants operating in accordance with the same high standards to exactly meet your specifications.

Whether your aerosol product is packaged in metal or glass, in thousands or millions of units . . . whether you have a product now on the market, or in the experimental or idea stage, you cannot afford to overlook the production and product development facilities G. Barr & Company provides.

We will be pleased to present exact figures.

WRITE, WIRE OR PHONE:

G. BARR & COMPANY

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PLANTS IN: LOS ANGELES • CHICAGO • NEW YORK

There is an experimental tool shop, 6,500 square feet of controlled temperature storage rooms for testing shelf life, machine design facilities and equipment assembly areas, in addition to the pilot areas.

Lenwick Ylvisaker, general manager of the metal division and research development department, is in charge of the metal research and development program in Chicago.

— ★ —

Colored Stitching Wire

Stitching wire finished in 12 different shades was introduced recently by Acme Steel Co., Chicago. "Colorstitch" wire will aid product identification in sale displays and may help inventory classification and control. The new wiring can be used with Acme's accurate stitching method or as regular flat stitching wire on all standard machines. Said to be resistant to chipping and peeling, the product is conventional stitching wire with a vinyl paint finish bonded to the galvanized wire surface.

— ★ —

Stokes Changes Name

F. J. Stokes Machine Co., Philadelphia, has changed its name to F. J. Stokes Corp. effective July 1. The change was announced by Francis Dougherty, president of the 60 year old organization. Stokes was founded in 1895 by the late Francis J. Stokes as a manufacturer of hand operated pharmaceutical tableting presses. From this field, the firm expanded into making compacting presses for a wide range of materials. Later the firm developed a line of dryers, mixers, mills and granulators and then went into the vacuum drying equipment field. Today the manufacture of vacuum processing equipment is one of Stokes' most important activities. The company has eight district offices in the United States. In 1953 it opened a Canadian sales office in Montreal and last year a Canadian subsidiary was established: F. J. Stokes Co. of Canada, Ltd., with headquarters in Toronto. An International division was set up in 1954.

Mueller Crown Cork V.-P.

Appointment of Karl W. Mueller as vice-president and director of manufacturing for Crown



Karl W. Mueller

Cork & Seal Co., Baltimore, effective July 1, was announced by Russell Gowans, president. Mr. Mueller will be responsible for directing and coordinating the manufacturing operations of the firm's 13 plants in the United States. These include the crown and closure division's four plants, the can division's six plants, the western division's two plants and one machinery division plant. He will make his headquarters in the firm's Baltimore home office.

Prior to joining Crown, Mr. Mueller was vice-president of operations of Trailmobile, Inc., a subsidiary of Pullman, Inc. He was graduated from Cornell with a mechanical engineering degree in 1932 and after post-graduate work majoring in industrial management, he received an M.S. degree in industrial engineering from Stevens Institute of Technology in 1942.

— ★ —

O-I Bottle Plant in Cuba

Owens-Illinois Glass Co., Toledo, O., started construction June 15 of a multi-million dollar bottle manufacturing plant at San Jose de las Lajas, 20 miles southeast of Havana, Cuba. Scheduled for completion in the latter part of 1957, the plant will be capable of producing about 72 million bottles and drinking glasses a year. Prin-

cipal products will be glass containers for the packaging of various consumer products. The unit will be operated by Compania de Vidrios Owens-Illinois de Cuba, S. A., a wholly owned O-I subsidiary.

The new unit will occupy about 27 acres of a 148 acre site, will provide about 214,000 square feet of floor space on a single story and partial basement.

— ★ —

Fairchild in Sunex Post

A. Holland Fairchild has been appointed employment manager for the Sunex Division of Sun Tube Corp., Hillside, N. J., it was announced in June by Kenneth M. Leghorn, president. Mr. Fairchild joined the firm four years ago, worked in Sun Tube's production and sales departments prior to his recent advancement.

— ★ —

Bradley Dewey Retires

Bradley Dewey, president and founder of Bradley Container Corp., Maynard Mass., announced late in June his retirement from administrative duties with that company. At the same time he was appointed as a consultant to top management and a special representative for Olin Mathieson Chemical Corp., New York, in the field of plastic squeeze bottles, tubes and other walled containers and in the international licensing activities pertaining thereto.

Since the formation of Bradley Container in 1953, Olin Mathieson has held the major financial interest in the company. Bradley now will be operated as a division of Olin Mathieson. This development has been necessitated by the unexpectedly rapid growth of demand for the company's products and consequent need for additional capital investment and more extensive and flexible facilities, Mr. Dewey said. Latest of the firm's product developments is a new metal ended squeeze plastic container which has been market tested for use with liquid detergents and shows promise in this application. It has found acceptance in



Whatever shampoo she prefers

**THERE'S A DU PONT DETERGENT
TO MAKE IT BETTER!**

DUPONOL* EP—for better clear liquid shampoo. This detergent gives you the same, high-quality results every single batch: a fine, pale golden shampoo that will not fade or discolor on display. You use less thickener in formulation because "DUPONOL" EP has greater response, retains excellent cleansing action.

DUPONOL* WA PASTE—for better solid-cream shampoo. Formulate with "DUPONOL" WA Paste for the *whitest* shampoo. Will not discolor through heat, aging or light. Less thickener is needed for the desired viscosity; cleansing power is simply controlled while foaming power remains excellent. You get easy, economical formulations.

DUPONOL* WAQ—for better cream lotion shampoo. When you want controlled cleansing, this is the detergent to use. "DUPONOL" WAQ gives your shampoo very good foaming with gentle, non-drying action. Heat, light and aging will not rob your formulation of its *whitest* white color. You'll use less thickener for uniform body and viscosity, too.

FOR BETTER ALL-AROUND RESULTS, call on Du Pont's technical staff for advice and information. We have available informative bulletins containing typical formulas which you may get by writing on your company letterhead to E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Dyes and Chemicals Division, Wilmington 98, Delaware.

*REG. U. S. PAT. OFF.



REG. U. S. PAT. OFF.

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Dupontol

SURFACE ACTIVE AGENTS

BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

the floral dust and garden insecticide field.

Mr. Dewey founded Dewey & Almy Chemical Co. and was its president for 30 years. The firm now is a division of W. R. Grace & Co., of which Mr. Dewey is a director.

Vulcan Vacation

Vulcan Containers, Inc., Bellwood, Ill., recently announced that production personnel in the steel pail department will take their annual vacation from July 23 through Aug. 3. The firm will continue to operate its offices, warehouse and shipping departments during this period.

"Perma-Lined" Containers

A high-bake "Perma-Lined" steel shipping container was introduced recently by Continental Can Co., New York. Designed for the shipping of liquid detergents, chemicals, and other products in need of complete protection against contact with metal the containers come with phenolic, vinyl, and epoxied resin linings according to the corrosion characteristics of the product. An open top lug cover style in sizes from two to 12 gallons and a closed head five gallon drum are available. Uniform film thickness and complete coverage are achieved by application of the lining material by the airless hot spray method developed by Continental Can.



Walsh Canco Sales Mgr.

Edward K. Walsh, former assistant general manager of sales, has been appointed general manager



Edward K. Walsh

in charge of the sales department of American Can Co., New York, it was announced recently by William C. Stolk, president.

Mr. Walsh joined American Can in 1929. He held a number of sales posts in New York and has served as local sales manager and district sales manager in Baltimore. In 1950 he was appointed manager of sales for the Atlantic division and later in the same year assistant general manager of sales.

Soon after his appointment, Mr. Walsh announced formation of a non-food container division within the sales department to handle sales of cans for detergents, pressure packaged products, and other specialties. General manager of the new division is William F. May, who joined the firm 17 years ago as a technician in the Maywood research laboratory. In 1946 he became supervisor of the container research department. He has served as special technical assistant in general manufacturing, superintendent of manufacturing in the Pacific division, as a special assistant in the industrial relations department and as supervisor of the enamel and decorating division. Prior to his recent advancement he was manager of the fiber container department.

Aerosol containers accounted

for some 235 million units with a billion production mark not too far away, Mr. Walsh said in pointing to the non-food can sales as one of Canco's fastest growing markets. Another large seller is the non-drip container for liquid household laundry detergents.

Crown District Managers

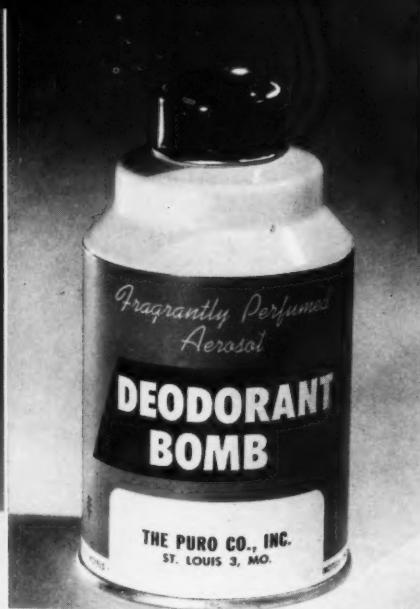
Crown Cork & Seal Co., Baltimore, has established 12 district sales offices within the crown and closure division, it was announced recently by S. V. Tuttas, division manager of sales. These offices will handle sales and service for all products marketed by the division including bottle caps, closures, specialty items, and the bottling and filling machinery and other trade equipment manufactured by the company's machinery division.

District offices under the supervision of William Fox, field sales manager, will cover the entire United States except nine western states which continue to be under the firm's Western Division.

The following district sales managers have been appointed to head the new offices: Don Naylor, Baltimore; Rube Wagner, Chicago; S. Kriegsman, Cincinnati; W. I. Lang, Dallas; W. M. Jackson, Detroit; H. D. Bloom, Leeds, Ala.; K. A. Boss, New Orleans; G. B. Dingley, New York; E. P. Stuart, Orlando, Fla.; W. F. Kneip, Jr., Philadelphia; V. R. Hoffman, St. Louis, Mo.; E. L. Brooks, Jr., St. Paul.

William F. May





Newest additions to the line of deodorant blocks of Puro Co., St. Louis, are "Puro" perfumed insect spray for controlling a wide range of flying and crawling insects; an aerosol dispensed room deodorant, and a wick type room

deodorant. All three new products are available for sale through sanitary supply distributors under their own brand label or Puro's. Insect spray can come complete with plastic type, finger control dispensing unit.



WHAT'S NEW?

New "Alumicone" liquid polish for all aluminum subjected to weathering has been developed recently by Mark "A" Products Co., New York. Product contains General Electric silicones and is said to work well on chrome. Comes packaged in 16-ounce cans to retail for \$2.00.

New purse size "Tweed" hair spray of Lenthier, New York, is companion piece of larger size boudoir bottle. Aerosol dispensed, "Tweed" hair spray scents and sets hair in single application. Glass bottle, coated with non-slip aquamarine shade of plastic is lettered in brown. Suggested retail price is \$1.00 plus tax. Purse size package is free with purchase of regular size (4½ oz.) bottle of "Tweed" hair spray. Special tuchsia, black and white counter displays available for combination offers of two sizes of hair spray and purse size hair spray and \$1.00 size of "Adam's Rib" perfume. Center: new "Wool-Kare" cold water soap in liquid and powder forms for washing woolens and cashmeres was announced recently by Columbia-Minerva Corp., New York. Product,

which contains a water softener, washes and rinses in cold water, company claims. "Wool-Kare" retails for \$1.00 in either powder or liquid form. New "Bright Touch" shampoos (right) were announced recently by Tussy Cosmetiques, New York. Available in two forms: as liquid cream and oil, products are designed for oily and normal and dry hair, respectively. From July 26 through Sept. 8, 12-ounce regular \$2.00 sizes of "Bright Touch" shampoos will be introduced for \$1.00 each. Round glass bottles are printed by silk screen in turquoise blue and feature matching fluted plastic cap. After Sept. 8, the new Tussy shampoos will come in two sizes: the 12-ounce bottle to retail for \$2.00 and a six-ounce size which will retail for \$1.00.



sale
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cold
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ham-
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and
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Top row, left to right: New "Shampion" rinseless shampoo of Jordeau, Inc., South Orange, N. J., may be used without water. Product is applied to hair, rubbed in, reapplied and rubbed until it foams. Hair is then wiped dry with turkish towel. Eight ounce bottle of "Shampion" retails for \$1.00, plus tax. Redesigned packages for "Southern Rose" shampoo and hair dressing of National Products Co., Eau Clair, Wis., were announced recently. Principal design changes, include adoption of "Contoure Line" bottles for both products and new and attractive individual cartons and labels for "Southern Rose" hair dressing. "Pinol" pine-tar shampoo and the hair dressing come in four and eight-ounce bottles supplied by Owens-Illinois Glass Co., Toledo. Molded plastic closures are by Armstrong Cork Co. U. S. Printing & Lithographing Co. supplies cartons and labels for hair dressing, and labels for the shampoo are by Milwaukee Label & Seal Co. New "Super-Blue" heavy duty, liquid laundry detergent of Reily Chemical Co., New Orleans, comes in pint and quart glass bottles, left and right, respectively. Product was developed and field tested by Reily for Standard Coffee Co., New Orleans, who will distribute the detergent. A heavy duty laundry detergent, "Super-Blue" can also be used for cleaning appliances, etc. The product derives its name from its color (light blue). It contains an optical bleach supplied by Geigy Chemical Corp., New York. Quart bottles supplied by Owens-Illinois Glass Co., Toledo. Knox Glass Bottle Co. makes the pint bottle. Both feature white applied color labels through which the blue

color of the product shows. Retail price of quart package is 98 cents, the pint size is 59 cents. "Super-Blue" will be distributed through the southeastern states including Texas, Oklahoma, Missouri, Kentucky, West Virginia, Maryland, as well as California.

Bottom row: left to right: New aerosol spray that both treats burns and protects skin with a cooling emollient film was announced recently by General Scientific Equipment Co., Philadelphia. Packed in five-ounce cans, "G-63" contains analgesic agents to alleviate pain and hexachlorophene to preclude secondary infection. Film deposited by spray isolates the burn and keeps skin moist and soft. It eliminates the need for bandages or dressings. Product may also be used for treatment of sunburn, scratches, chapped skin, insect bites and other minor skin irritations, maker says. "Speed-Kleen," new lanolized antiseptic hand cleaner of Landon Laboratories, Kansas City, Mo., contains "Actamer," a bactericide made by Monsanto Chemical Co., St. Louis. Cleaner is claimed to remove stains, paint, printing, lithographic and Ditto machine inks from hands, clothes, etc. "Speed-Kleen" comes packaged in quart can with plastic dispensing nozzle. New aerosol plant spray just announced by Plasti-Kote, Inc., Cleveland, comes packaged in 12-ounce can to retail for \$1.69. Product is claimed to be effective on such household plants as St. Paulia, ivy, fuchsia, kentia palms, etc. It also controls black spots on roses, as well as mite, aphids, thrips, white fly, and certain other chewing and sucking insects.

New combination wax and cleaner announced recently by Bardahl Oil Co., St. Louis. Cans of "Insul Ease" auto wax and cleaner come in combination display package to retail for \$2.50. "Biz," Procter & Gmble Co.'s new heavy duty, liquid laundry detergent comes packed in can by American Can Co., New York. Overall gold design features spots of red, for product name, and red reverse just below name. New acrylic sprays dispensed from aerosol cans for decorat-

ing and touch-up paint jobs were announced recently by Acrolite Products, Inc., West Orange, N. J. Sprays may be applied to any wood, metal, or paper surface either indoors or outside. They are claimed to be resistant to sun, salt air, alkali or fungus growth. "Acrolite" sprays are available in 14 colors. Colgate-Palmolive Co., New York, is test marketing new "super soft" version of "Lustre Net" aerosol hair control spray. Product also contains lanoline esters.





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Tergescents®

Women are always "fragrance-conscious"—a pleasant scent is often the prime factor in her repeat purchases. You can key your household detergents to her preferences with low-cost Givaudan *Tergescents*.

These powerful, appealing fragrances—for liquid or powdered detergents—are especially developed to assure your detergent's success. They will give you outstanding consumer acceptance at very low cost.

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SOAP and CHEMICAL SPECIALTIES

Hazel-Atlas Merger

Plans for merger of the businesses of Continental Can Co., New York, and Hazel-Atlas Glass Co., Wheeling, W. Va., were announced early this month by General Lucius D. Clay, chairman of Continental Can, and John Harrison McNash, chairman of Hazel-Atlas. The agreement has been approved by directors of each company and is subject to approval by stockholders of Hazel-Atlas at a special meeting expected to be called for some time in August.

The terms of the plan provide for shareholders of Hazel-Atlas Glass to receive 999,141 shares of Continental Can common stock. This will result in a ratio of 46/000 share of Continental for one share of Hazel-Atlas. On this basis, Continental Can would have a capitalization consisting of \$79,648,000 long-term debt, 150,000 shares of \$3.75 cumulative preferred stock, and 8,755,499 shares of common stock. Hazel-Atlas's present capitalization consists solely of 2,172,045 shares of common stock.

Crown Cork & Seal Co., Baltimore, has just introduced a fabricated three-piece aerosol container, one style of which is shown below. The new container, still known by its development project name of "Spra-ette," is expected to complement Crown's "Spra-tainer". The new can, the interior of which is not lacquered, has a recessed bottom which permits it to be stacked, the bottom fitting over the standard protective valve-cap.



New plastic closure, called "Reverse Taper Empress," and designed particularly for toiletry and cosmetic packages was introduced recently by the closure and plastics division of Owens-Illinois Glass Co., Toledo. The new closure is available in four sizes which include 15, 18, 20 and 22 millimeters for the tall CT finish glass (415 style). The cap is being produced in a wide range of colors and in the darker phenolic shades. Compression molded, the new "Empress" closure is designed to add beauty and style to glass containers. Side ribs enhance the appearance of the closure but do not extend over the top, leaving adequate room for easy price marking.

At 1955 year-end, Hazel-Atlas had total assets of \$37,884,425 and working capital of \$19,904,256. Total assets of Continental Can at year-end were \$381,917,101 and working capital of \$110,815,816.

forum of the Packaging Institute, Sept. 10 through 12. The forum's theme is to be "Dollars and Sense of Protective Packaging."

New Patents

(From Page 73)

Packaging Show Preview

Speed, versatility, and automation are the trends to predominate at the Packaging Machinery and Materials Exposition of 1956, to be held in Cleveland, Sept. 11 through 14, under the sponsorship of the Packaging Machinery Manufacturers' Institute. A total of 250 pieces of equipment to be exhibited will include 126 new pieces of machinery. Exhibits featuring accessories such as taping and sealing units, bag closers and marking and imprinting devices emphasize the new demands for speed and automation. A wide variety of packaging materials will be shown, partly in action exhibits with the machinery.

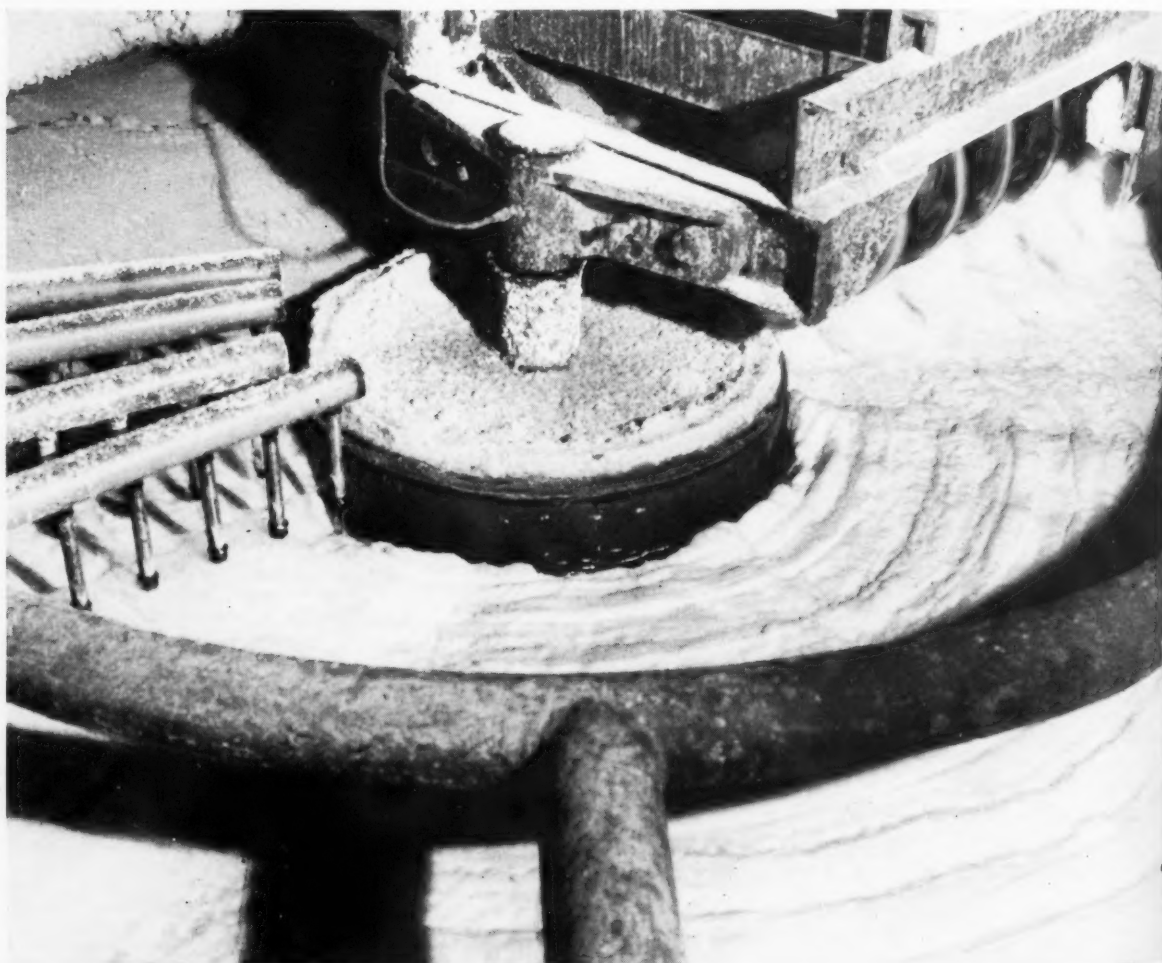
Concurrently with the exposition there will be the 18th annual

tergent for each part of said builder, said aqueous medium supplying water only in an amount sufficient to form a hydrate of said hydratable alkali metal detergent builder and said water incorporated with said aqueous medium being retained in said mixture as a hydrate of said builder.

No. 2,748,035. Method of and Composition for Cleaning Containers Containing Aluminum and Tin, patented by Ira J. Duncan, Detroit, Mich., assignor to Detrex Corp., Detroit, Mich. The patent teaches a method of removing incrustations from a work object having a surface selected from the group including tin, aluminum and their oxides, in which method the object is immersed in a hot, aqueous, strong alkali cleaning solution in the presence of a dissimilar surface selected from the group consisting of tin, aluminum and their oxides, which solution tends to attack the surface of said work object by galvanic corrosive action, the novel step which comprises inhibiting said corrosive action by incorporating about 2% to 8% by weight ferricyanide ions into said solution.

West End doubles capacity of sodium sulfate plant

Acceptance of West End Sodium Sulfate has spread so rapidly that we are enlarging our plant to produce over 100,000 tons a year. Even at this rate we are tapping less than 50% of our natural raw material supply. This output and reserve provides industry with a dependable source of highest quality sodium sulfate to serve its growing needs. Samples, prices and freight schedules will be submitted gladly on request. Please include specifications.



West End Chemical Company

SODA ASH • BORAX • SODIUM SULFATE • SALT CAKE • HYDRATED LIME
EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIFORNIA • PLANT, WESTEND, CALIFORNIA

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of \$25 must accompany notice of opposition.

Gold Nugget—This for wash mitts and polishing pads, particularly for use in cleaning automobiles. Filed Jan. 9, 1956 by S. M. Arnold, Inc., St. Louis. Claims use since on or before May 5, 1955.

Tandy—This for dentifrice. Filed Jan. 13, 1956 by Whitehall Pharmacal Co., New York City. Claims use since Dec. 15, 1955.

Just—This for detergent compositions having disinfecting properties for all purpose cleaning. Filed June 10, 1954 by Fuld Brothers, Inc., Baltimore. Claims use since February 1951.

Sunny—This for dishwashing compound, scouring powder, water softener, detergents, cold cream hand soap, stair remover, etc. Filed Dec. 1, 1954 by R. A. Raiton Co., Chicago. Claims use since at least as early as 1915.

Rubber-Gloss—This for general purpose cleaner. Filed June 23, 1955 by Franklin Research Co., Philadelphia. Claims use since February 1932.

Hydrosperse—This for dispersing and cleaning compound used in water wash spray booths. Filed Dec. 23, 1954 by Fidelity Chemical Products Corp., Newark, N.J. Claims use since May 15, 1954.

Sash, Hail, Plume—These for soaps. Filed July 14, 1955 by Armour and Co., Chicago. Claims use since June 3, 1955 on all three.

Diol—This for shampoo. Filed Aug. 8, 1955 by Armour and Co., Chicago. Claims use since Jan. 27, 1938.

Who's Who—This for soap and shampoo. Filed Aug. 10, 1955, by Les Parfums de Dana, Inc., New York City. Claims use since July 26, 1955.

Seclude—This for bottle washing detergent. Filed Oct. 26, 1955 by Klenszade Products, Inc., Beloit, Wisc. Claims use since Sept. 29, 1955.

Black Magic—This for insecticides and fungicides. Filed Oct. 4, 1954 by Parrott Chemical Co., Stamford, Conn. Claims use since Aug. 7, 1948.

M-P—This for chemical preparation in liquid form for preventing rust and corrosion, and sealing automotive cooling systems. Filed July 6, 1955 by Radiator Specialty Co.,

Charlotte, N.C. Claims use since Mar. 3, 1955.

W-P—This for liquid bleach for use as a disinfectant and household germicide. Filed Oct. 10, 1955 by Waples-Platter Co., Fort Worth, Tex. Claims use since March 1943.

Angel-sof—This for liquid fabric softener. Filed Apr. 26, 1955 by Masco Chemical Corp., Pasadena, Tex. Claims use since October 1954.

Glashine—This for detergent for use in automatic dishwashers. Filed Jan. 26, 1955 by Thomas Chemical Co., Lima, O. Claims use since May 27, 1947.

Softened—This for vegetable oil shampoos. Filed Jan. 24, 1955 by Clairrol, Inc., New York. Claims use since Feb. 20, 1939.

Kem—This for paint brush cleaner. Filed March 16, 1955 by Sherwin-Williams Co., Cleveland, O. Claims use since Aug. 12, 1954.

See—This for hard surface cleaner. Filed June 13, 1955 by Sanders Chemical Co., Philadelphia. Claims use since July 1, 1952.

Duck Soup—This for waterless hard cleaner. Filed June 27, 1955 by Duck Soup Corp., Salem, Oreg. Claims use since May 12, 1955.

WB—This for floor and wall cleaner and liquid soaps. Filed July 1, 1955 by A. Reed Wilson, Kansas City, Mo. Claims use since Nov. 10, 1932.

Triocin—This for soap. Filed July 13, 1955 by Zotex Pharmacal Co., Stamford, Conn. Claims use since July 6, 1954.

Watershed—This for water soluble rust preventive solvent and detergent for use on ferrous and non-ferrous metals. Filed Aug. 10, 1955 by Heathbath Corp., Indian Orchard, Mass. Claims use since Aug. 1953.

Tergomatic—This for laundry detergent. Filed Aug. 12, 1955 by William A. Brock, doing business as Savin Products Co., Dorchester, Mass. Claims use since Oct. 1, 1954.

Columbia—This for cleaner for non-waxed floors and for wax remover from all types of surfaces. Filed Aug. 15, 1955 by Columbia Wax Co., Glendale, Calif. Claims use since March 29, 1953.

Duo-Dellay—This for combination cleaner and anti-soil preparation for use on soft furnishings, carpets, painted surfaces, wallpaper, linoleum, etc. Filed Aug. 1, 1955 by Artloom Carpet Co., Philadelphia. Claims use since July 19, 1955.

Mac Suds—This for washing detergent. Filed Aug. 19, 1955 by Hamilton and Auslander Manufacturing Co., doing business as Clyde Chemical Co., Phenix, R. I. Claims use since June 22, 1955.

Kleontrol—This for liquid cleaner and lubricant for use on radio and TV receiver parts. Filed Oct. 4, 1955 by R-Columbia Products Co., Highwood, Ill. Claims use since May 25, 1955.

SH-Boom—This for shampoo. Filed Nov. 9, 1955 by Quartet Chem-

ical Co., Chicago. Claims use since June 13, 1955.

Shampair—This for shampoo. Filed Nov. 21, 1955 by Bymart-Tintair, Inc., New York. Claims use since Oct. 27, 1955.

Connoisseurs—This for cleaner for jewelry, watches, and eyeglasses. Filed Jan. 30, 1956 by Connoisseurs Products Corp., Boston, Mass. Claims use since Sept. 4, 1946.

H bar H—This for floor waxes and dust controlling preparations. Filed Oct. 25, 1955 by Hubbs and Howe Co., Buffalo, N. Y. Claims use since on or about July 1, 1954.

Early Virginian—This for furniture polish. Filed Oct. 28, 1955 by Luther Oliver Moser, doing business as Moser Furniture Co., Lynchburg, Va. Claims use since Sept. 2, 1955.

Pixie—This for impregnated cleaning and polishing cloth. Filed Nov. 14, 1955 by American Bio-Standards Corp., New York. Claims use since Oct. 7, 1955.

Gulf—This for hydraulic brake fluid. Filed May 16, 1955 by Gulf Oil Corp., Pittsburgh, Pa. Claims use since on or about Nov. 8, 1944.

Epolene—This for polyethylene waxes and waxes made from polyethylene. Filed June 8, 1955 by Eastman Kodak Co., Rochester, N. Y. Claims use since May 19, 1955.

Beads o' Bleach—This for product in dry form having bleaching, deodorizing, disinfectant, germicidal and sanitizing properties. Filed June 13, 1955 by Purex Corp., South Gate, Calif. Claims use since Nov. 10, 1954.

King Fluff—This for fabric softening rinse. Filed June 14, 1955 by Mangels, Herold Co., Baltimore, Md. Claims use since May 27, 1955.

Safe Cide—This for insecticide. Filed June 28, 1955 by National Chemical Laboratories, Inc., West Palm Beach, Fla. Claims use since May 13, 1955.

Black Leaf—This for insecticides, herbicides, rodenticides, fungicides, etc. Filed July 8, 1955 by Diamond Black Leaf Co., Cleveland. Claims use since April 12, 1955.

High Wide and Handsome—and—**Trail Blazers**—Both for combinations including lather shave preparations. Filed May 27, 1955 by Olin Mathieson Chemical Corp., New York. Claims use since April 7, 1955.

Ethodont—This for toothpaste. Filed May 31, 1955 by James K. Moore doing business as Ethodont Co., Berkeley, Calif. Claims use since March 8, 1955.

Stripes—This for toothpaste. Filed Oct. 21, 1955 by Lee-Jon Co., Mount Vernon, N. Y. Claims use since July 5, 1955.

Sir Boss—This for shampoo. Filed April 25, 1955 by Weseg Corp., San Francisco. Claims use since April 18, 1955.

Wolcospray—This for aerosol type dispensers and components thereof. Filed March 30, 1955 by Wolcospray, Inc., Hartford, Conn. Claims use since March 2, 1955.

Plax—This for plastic bottles. Filed May 2, 1955 by Plax Corp., West Hartford, Conn. Claims use since Dec. 15, 1954.

Polyspray—This for plastic
(Turn to Page 167)



1

**Aerosol Packaging Increases
Number of Users!**



2

**Aerosol Products Are
Used More Frequently!**

Market Your Products

- Get a 4-WAY

From retail stores across America comes the answer to why so many "sleeper" products suddenly are best sellers when packaged as aerosols: *they get a four-way sales boost!*

A recent survey* of leading cosmetic and fragrance manufacturers reveals that increased sales and an expansion of markets result repeatedly with the change to aerosol packaging.

Here's what they are saying:

"Our new aerosol cologne is being used in ways and by people we could never sell before," one enthusiastic manufacturer reported.

"There's less time between repeat purchases" said another. "Women use our aerosol package more often than they used the same product in liquid form," a third reported.

All this means just one thing to smart marketers—you're missing today's best bet for stimulating sales if you haven't considered aerosol packaging for your product. Last year's 240-million-unit aerosol sales are proof of that.

*Conducted by a leading drug and cosmetic trade magazine

If you have products that can be sprayed, brushed on, dusted or daubed, the revolutionary aerosol packaging technique may offer you a tremendous potential for profit. Investigate now while the field is still increasing and merchants are eager to feature anything new in aerosols.

For the best aerosol products
... USE

genetron[®]
PROPELLANTS

... the right propellant for
every aerosol need.



3

**Aerosol Products Are Used
More Freely Each Time!**



4

**Aerosol Products Are
Used in New Ways!**

as Aerosols

SALES BOOST!

Here's Free Help!

If you want technical guidance in developing the right propellant and formulation for your product, see General Chemical. If you want information on aerosol containers, valves, packaging equipment, contract fillers, you can get it from General Chemical. As the producer of "Genetron" propellants, we have the specialized experience and the research and testing facilities to help you find the right answers to your problems.

And, you don't have to invest a cent in special equipment or personnel to enter the profitable aerosol market. There

are contract fillers near you who will take over the entire job for you quickly, economically.

Write now for list of firms equipped to fill aerosols with "Genetron" propellants.



Interested? Then send today for illustrated booklet packed with fast facts on how to market your products as aerosols: "How to Push Up Profits With Aerosols."

Write to:

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Basic Chemicals for American Industry





Our Plant . . . *Your Warehouse*

Besides ample facilities for handling your bulk ingredients, we have extensive warehousing space for the storage of your products after packaging. When it's time to ship, our personnel and equipment are geared to move large or small orders in a hurry . . . and we're glad to handle drop shipping. We

have direct railroad sidings and trucking service at our door. As a result, our plant can serve as *your warehouse* . . . a central distributing point . . . saving time and cutting costs. For details about our complete services in contract filling (liquid, pressurized or aerosol) write, 'phone or wire . . .

PETERSON
Filling and Packaging Co.
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PRESSURE PACKAGING

PHARMACEUTICAL aerosols as the "next stop" in pressurized packaging's unending search for new markets will be the subject of a panel discussion at the Packaging Institute's Drug and Pharmaceutical Seminar at the Hotel Statler in Cleveland, September 11.

Moderator of the half hour, mid-afternoon, session will be Richard J. Hennessy, of Lederle Laboratories division of American Cyanamid, who, incidentally, also serves as vice chairman of the Institute's Drug and Pharmaceutical Committee. Serving with him on the panel will be T. D. Johnson of Du Pont's Kinetic Chemicals Division, who'll discuss the principles and scope of operation of the aerosol packages, and Morris Root, technical director of G. Barr & Company, whose panel subject will be "Pharmaceutical Aerosols from Idea to Product."

* * *

DEVELOPMENT of a nonflammable ethyl chloride to be combined with dichlorotetrafluoroethane (Du Pont "Freon-114" and General Chemical "Genetron-320") in a topical anesthetic for skin planing and similar minor surgical operations, has been announced by Gebauer Chemical Company of Cleveland. The new product will be packaged in a metal aerosol container under the trade-name, "Gebauer's Fluro-Ethyl."

While aerosol pioneer Charles Gebauer has marketed ethyl chloride in a glass, self-spraying bottle for many years for just such a purpose, the aerosol "surface freezing" or cold-desensitization products got their first major push in medical circles just about two years ago with formal papers on surgical skin planing by Dr. Joseph J. Eller, of New York City, Dr. J. Walter Wilson, of Los Angeles, Dr. A. Stern-

berg of New York University's Bellevue Medical Center, and others. They found Du Pont's "Freon-114" dichlorotetrafluoroethane to be useful as a "safe and satisfactory" refrigeration anesthetic—superior to the older ethyl chloride "since it is nonexplosive and nontoxic."

While Du Pont itself has not promoted "Freon-114" as a surface anesthetic and has preferred to let independent doctor's reports do the "selling", at least two companies began packaging "Freon-114" on their own and under their own labels in aerosol containers for doctors' and surgeons' use. Suppliers are Brachvogel-Hovey Company of Los Angeles and Scully-Walton Company of New York City.

* * *

AT least two groups within C.S.M.A. are looking into the possibilities of public relations and consumer education programs as a sales spur . . . one is the aerosol division itself and the other an across-division-lines group producing moth control products. Neither project, actually, is new . . . the moth control group has been considering such a promotion plan off and on for at least three years . . . never has been able to obtain unanimous agreement of interested segments of the industry on how to conduct such a program.

Heading the current drive for a moth control promotion campaign is Don Templeton of Stanley Home Products. Agreement has been reached, we understand, that the campaign will be along the lines of consumer education as to the economic loss caused by moths . . . possibly will be extended to cover an unbiased, scientifically factual and accurate appraisal of the various chemical means of minimizing such loss, but in no event will be designed to promote any one of the

various chemicals. That makes sense to us, for to be successful a program like that must avoid commercialism, treat all available products impartially by chemical, rather than producer or trade-name, designation.

Fred Lodes of Precision Valve Corp. is the chairman of the aerosol division publicity committee, which for the last three or four months has been looking into a similar type of publicity-promotion campaign on aerosol products in general. Only definite action to date: Acceptance of the need for such a program . . . agreement that goal shall be an increase in consumer knowledge of the aerosol packaging principle and its advantage.

Current status of both projects: In the hands of task committees to formalize scope of promotion plans and iron out mechanics of operation and financial support base.

CSMA groups, incidentally, are not alone in thinking about such promotion plans.

Getting a jump on both of them from an insect control angle is a Kansas City enterprise known as the Home Insect Control Bureau, set up about three months ago as a "non-profit, public service organization" with the announced goal of helping the American family in its ceaseless battle against the insect enemy.

Dr. Harlan R. Shuyler, president of the Kansas Termite and Pest Control Association, is executive director of HICB (main office: P. O. Box 78, Kansas City 41, Mo.) . . . explains the Bureau's function as follows:

"By means of educational campaigns, HICB intends to make the public fully aware of the dangers stemming from insects which spread filth and disease, and cause damages in the United States estimated at about \$4 billion annually. These programs will emphasize that effective control of insects is a constant, year-round job, and not just a seasonal one."

Communications channels to be used by the Home Insect Control

Bureau, according to Dr. Shuyler, will include the press, television, radio, magazines, booklets, films, home economic programs, and super-market promotions.

Sounds to us like HICB's objectives exactly duplicate, but on a broader scale, those of the two CSMA groups. In fact, if the Kansas City project proves successful and effective, many of the people interested in the CSMA proposals may find a ready-made program in the Home Insect Control Bureau . . . see in it a way to avoid the procrastination and long-term dicker-ing that's particularly held up the group's moth control campaign plans.

* * *

MANUFACTURERS of aerosol fire extinguishers, basking in the comfortable glow of last year's production of 1.9 million units, had a few clouds painted into their otherwise blue-sky picture recently.

Speaking before the annual meeting of the National Fire Protection Association in Boston early in June, the New England city's fire chief, Edward N. Montgomery, criticized severely many of the hand-sized, push-button fire extinguishers now on the market . . . rapped some unidentified knuckles because of misleading claims as to the effectiveness of the aerosol fire extinguishers.

In effect, Montgomery warned, most, if not all, of the pint-sized extinguishers now on the market are being grossly oversold to the public as effective home protection. Actually, he said, they're effective protection only against a small, incipient blaze . . . not to put out a fire once it's really started, as indicated in some of the promotion.

To back up his estimate of their effectiveness, Montgomery said some marketers, in order to demonstrate the protection offered by their small aerosol units, have sprayed lighter fluid over a small pile of paper scraps, lit the pile, and immediately put out the flames with the aerosol extinguisher. Trouble

with that type of demonstration, he points out, is that the fire is never given a reasonable chance to burn . . . if it were, he maintains from trials, the aerosol extinguisher would be inadequate to cope with the fire. That test, too, is an unfair example of the usual case of emergency, for the aerosol extinguisher won't always be right at hand, or the person a fast enough thinker to grab it and go into action before the fire really has a chance to get under-way.

Gist of Montgomery's argument . . . and we go along with his thoughts . . . is that the public is apt to be led into a feeling of false security in regard to the small aerosol units.

From a legal-economic point of view, manufacturers and marketers of the aerosol fire extinguishers had better be sure their house is in order before there's prosecution for unfair trade claims. Significant to us is the fact that Underwriters' Laboratories has not seen fit to approve any of the small aerosol extinguisher units to date.

* * *

CSMAs board of governors and chairmen of key committees hold their next quarterly meeting at Oyster Harbors, Mass., September 23-26 . . . a repeat visit to the Cape Cod location where good food and quiet surroundings did much to offset cool, rainy weather that plagued the Board's 1954 meeting there.

* * *

RUMORS of minor troubles with a few aerosol products packed in glass containers "puts the needle in" the CSMA aerosol division's glass bottle committee to quickly get over the discussion stage and come up with standards.

Helene Curtis, we hear, is encountering complaints of propellant leakage in their recently announced, refillable purse-size dispenser for "Ultra Spray Net" hair spray. Bad crimp of the valve to the bottle is the bug-a-boo, according to our information.

Lentheric has hit trouble of a different sort, we're told . . . has

withdrawn one item from sales circles. Lentheric found—after the product was in retail outlets—that the distinctive bottle design they'd come up with was structurally weak and resulted in a number of cases of breakage.

In both cases, it appears to us, pre-marketing evaluation of the package was weak, if not lacking, and the deficiencies which should have been uncovered before the products were placed on sale were left to the consumer to discover. Things like that are bound to happen once in a while in a marketer's enthusiasm to get a new product or package on the market ahead of competition so as to gain the advantage of an exclusive "first". But when trouble occurs under such circumstances, the rush to be first can give a "black eye" to satisfactory products, too.

Standards for glass aerosol products might forestall such "boo-boos" . . . we hope a few cases like this will get the standards out of the talking stage and into reality.

* * *

IN other areas of CSMA operations, standards committees aren't asleep. A tentative method for determining the volatile-non volatile content of aerosol products by densimetric analysis has been approved by the aerosol administrative committee and published in CSMA Bulletin 104-56, dated June 21, 1956. Credit for the standards method goes to the Insecticide and Room Deodorants Standard Methods Sub Committee of the Aerosol Division's Scientific Committee, headed by Montford A. Johnsen of Peterson Filling & Packaging Co.

Published on the same day in Bulletin 103-56 was a tentative method for determination of solids content of aerosol coatings, as put together by the Paint Products Methods Sub Committee of the Aerosol Division's Scientific Committee, headed by Herman C. Phillips, Jr., of Hercules Powder, and more recently by Dave Tillotson, who has just left Stalford Pressure-

(Turn to Page 143)

Chemical Specialties

Proceedings . . .

Printed proceedings covering the 42nd mid-year meeting of the Chemical Specialties Manufacturers Association, held May 20-21 at Chicago, are now available for general sale to non-members of the Association. These published proceedings include all reports, papers and discussions at general sessions and divisional meetings. Also lists officers, board of governors, committee members and general association membership.

Proceedings are in a paper-covered volume with flexible plastic binding, 8½ x 11. Sent postpaid at \$7.50 per copy in the U. S.; \$8.00 elsewhere. Checks should accompany orders. Also some copies of proceedings of prior CSMA meetings are available at the same price. Send orders or requests for further information to

H. W. HAMILTON, *Secretary*



Chemical Specialties Manufacturers Association, Inc.

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Registered for use

**ON CATTLE AND
IN DAIRY BARN**

MGK *Repellent 11*

**Effectively Repels Stable
Flies, Horn Flies, Mosquitoes and Gnats**

Cattle and barn sprays made with MGK Repellent 11 will do much to maintain milk production during the fly and mosquito season. Such sprays, when properly formulated and applied are highly repellent and need be applied only every third day.

MGK Repellent 11 may be used at concentrations as low as 0.2% by weight, in combination with any currently acceptable emulsifiable or oil type dairy cattle spray.

MGK Repellent 11 is the first repellent chemical accepted and registered for use on cattle and in dairy barns by the Food and Drug Administration and the United States Department of Agriculture since the Pesticide Residue Amendment (frequently called the Miller Bill) went into effect in July, 1954.

Write for details

McLAUGHLIN GORMLEY KING COMPANY

1715 S.E. Fifth St., Minneapolis, Minn.

Please send me full information on MGK Repellent 11 for use in cattle sprays and dairy barn sprays.

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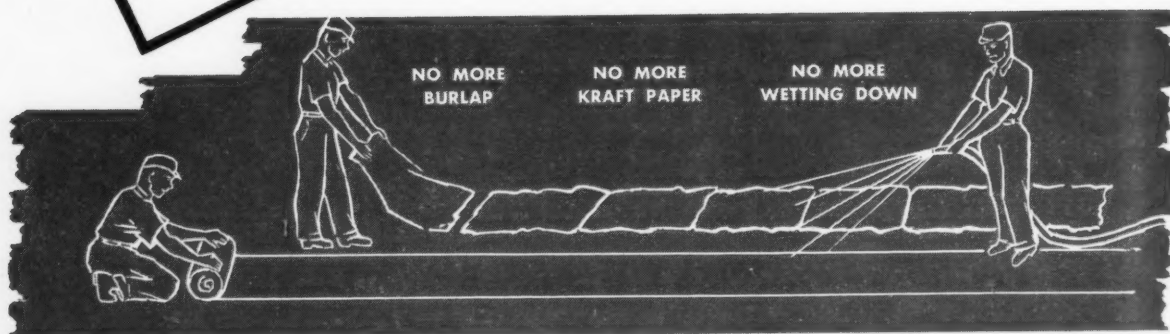


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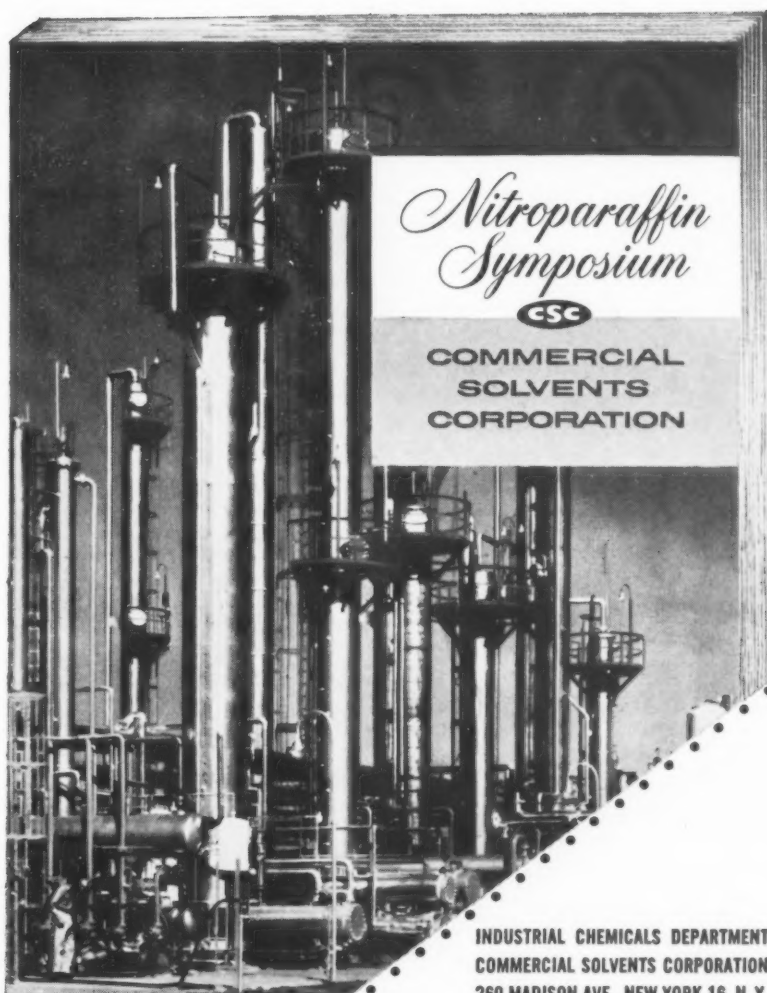
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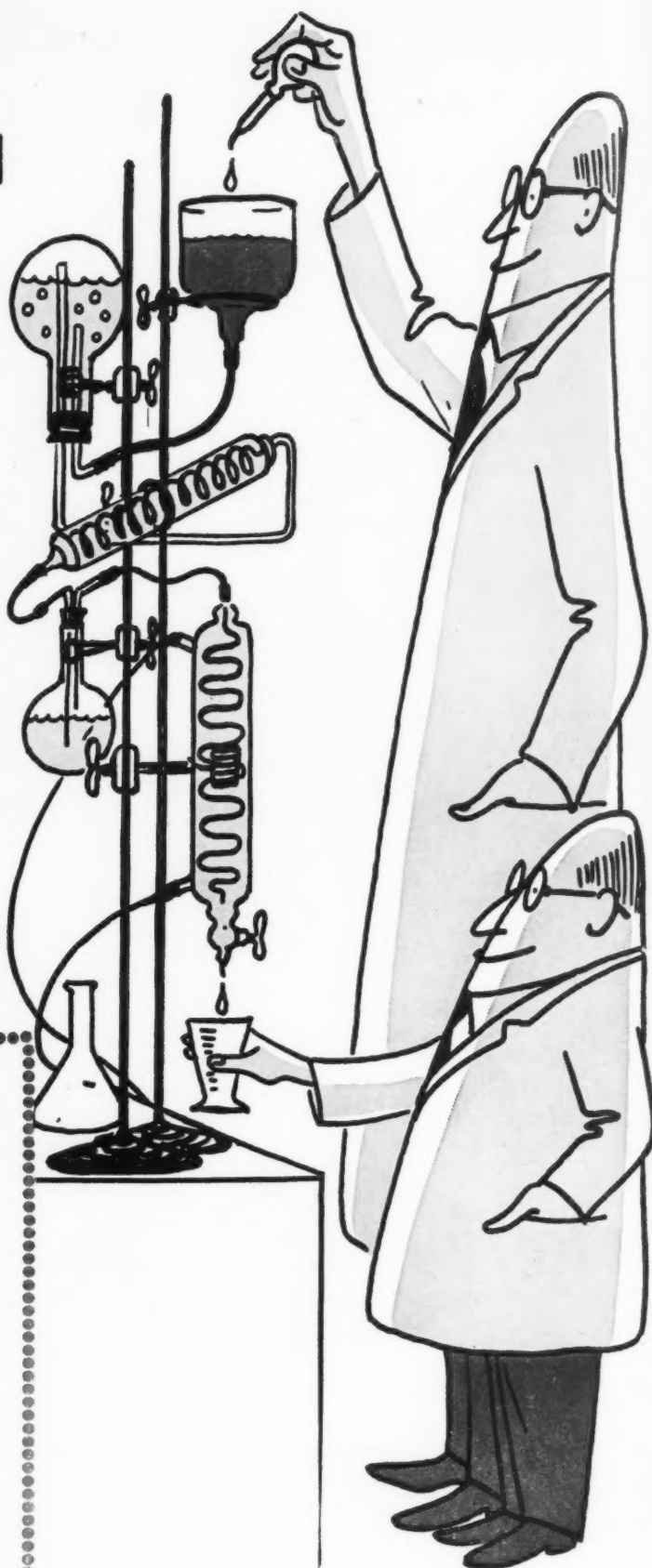
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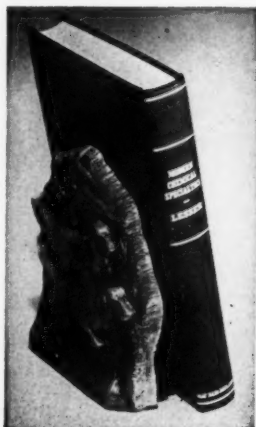
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Methylene chloride in

Aerosol Propellant Mixtures

By Michael J. Skrypa and Harold K. Shannon

Research Laboratory, Solvay Process Division,
Allied Chemical and Dye Corporation, Syracuse, N. Y.

THE first practical aerosols, the wartime insecticides packaged in heavy steel bombs, used Type 12* fluorinated hydrocarbon as the propellant. When the low pressure, "beer-can-type," aerosol container was developed shortly after the war, it demanded a low pressure propellant. The industry found that a 50/50 mixture of Type 12 and Type 11 fluorinated hydrocarbons had the necessary low vapor pressure and possessed all of the other properties necessary for an aerosol propellant. This 50/50 mixture of Types 11 and 12 was used almost exclusively as the propellant in all types of household aerosol products for many years.

More recently, it was found that the 50/50 methylene chloride-Type 12 mixture, and tricomponent mixtures which contain 50% Type 12 and complementary quantities of methylene chloride and Type 11 have approximately the same vapor pressure as the 50/50 mixture of types 11 and 12. The general propellant properties of these mixtures are comparable to those of the 50/50 mixture of 11 and 12

and are satisfactory for aerosol use.

The methylene chloride systems have two predominant advantages over systems composed entirely of fluorinated hydrocarbons. First, the substitution of methylene chloride for Type 11 affords a substantial saving in propellant cost. Secondly, the methylene chloride systems are better solvents for insecticides and resins than all-fluorinated hydrocarbon mixtures. This is particularly important in aerosol insecticides, artificial snow, lacquers, plastic sprays and other similar products in which it is necessary to obtain complete solution of active ingredients in the liquefied gas propellant. When using propellants composed entirely of fluorinated hydrocarbons it is often necessary to incorporate solvents specifically for the purpose of solubilizing the active ingredients in the propellant. The use of methylene chloride propellants will frequently preclude the necessity of adding such solvents to the formulation.

Much attention has been focused on methylene chloride propellants in recent years: the aerosol industry has become one of the major consumers of methylene chloride. The aerosol literature, however, is devoid of much reference to the properties of methylene chloride propellant systems. This article is presented in an attempt partially to fill this gap in the aerosol literature. It describes the properties of methylene chloride-fluorinated hydrocarbons propellants and

briefly discusses their economics and use.

Vapor Pressure

FIGURE 1 illustrates a series of vapor pressure-temperature curves for the methylene chloride-Type 12 system. These curves indicate that the 50% methylene chloride system has approximately the same vapor pressure as the 50/50 Type 11-Type 12 system which is shown in Figure 5. Figures 3 and 4 illustrate that the tricomponent systems containing 50% Type 12 and varying amounts of methylene chloride and Type 11 have approximately the same vapor pressure as the two binary systems. This is graphically illustrated in Figure 6. Any tricomponent system containing 50% Type 12 and varying amounts of methylene chloride and Type 11 will have a vapor pressure approximately equal to that of the 50/50 binary systems. Actually, as Figure 6 illustrates, the methylene chloride systems have a slightly higher vapor pressure than the 11-12 system of corresponding composition; methylene chloride is a poorer vapor pressure depressant than Type 11. The methylene chloride-Type 12 system which has exactly the same vapor pressure as the 50/50 11-12 system at 70°F, consists of 52% methylene chloride and 48% Type 12. Figure 2 presents the vapor pressure of binary mixtures of methylene chloride and Type 12 at 70°F.

*NOTE: Fluorinated hydrocarbon aerosol propellants are marketed under the trade names: "Genetron" (General Chemical Division, Allied Chemical & Dye Corporation and "Freon" (E. I. du Pont de Nemours & Company). For purposes of generalization in this paper, "Genetron 12" and "Freon 12" (dichlorodifluoromethane) will be referred to as Type 12, and "Genetron 11" and "Freon 11" (trichloromonofluoromethane) as Type 11 fluorinated hydrocarbons. This is in accordance with the designation used in Interim Federal Specification BB-C-OO-310 (11/4/54). For purposes of brevity, the words "fluorinated hydrocarbon" will usually be omitted and these compounds will be referred to simply as Type 11 or Type 12.

FIGURE NO. 1

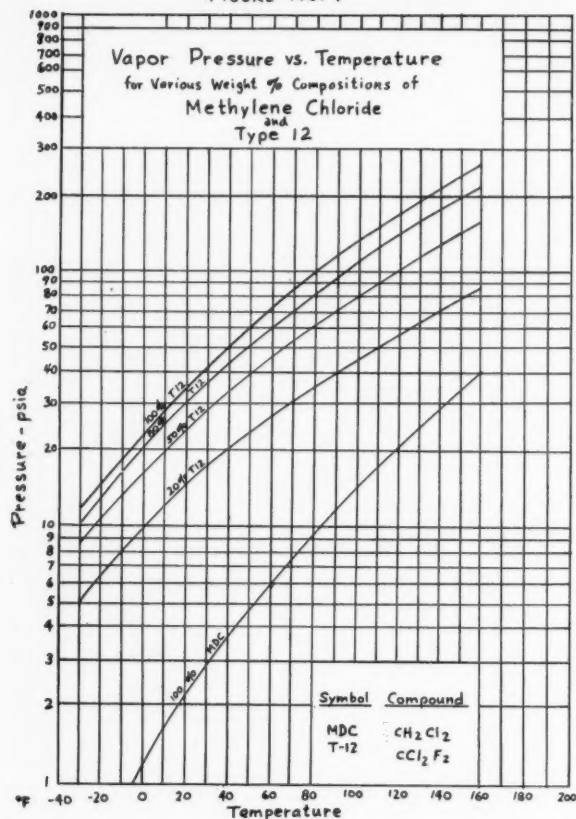


FIGURE No. 2

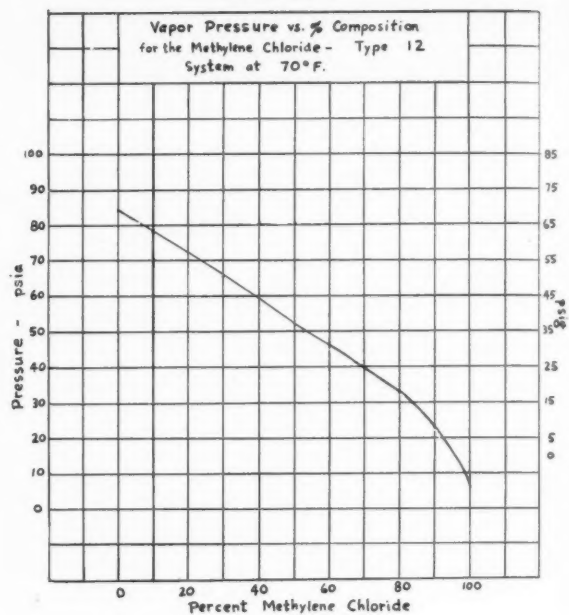


FIGURE No. 3

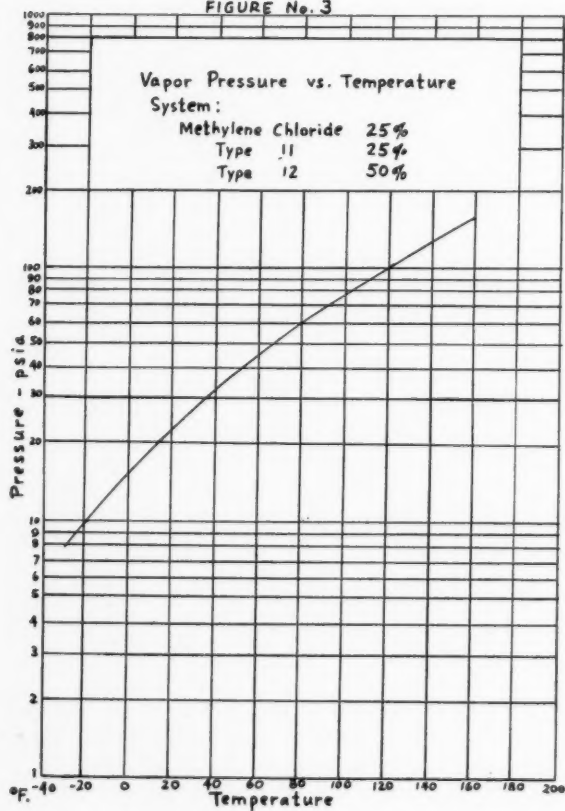


FIGURE No. 4

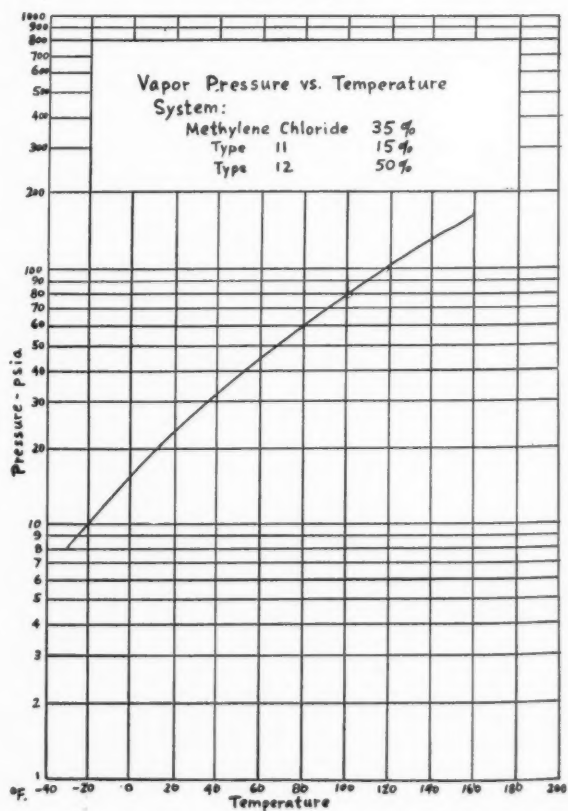


FIGURE No. 5

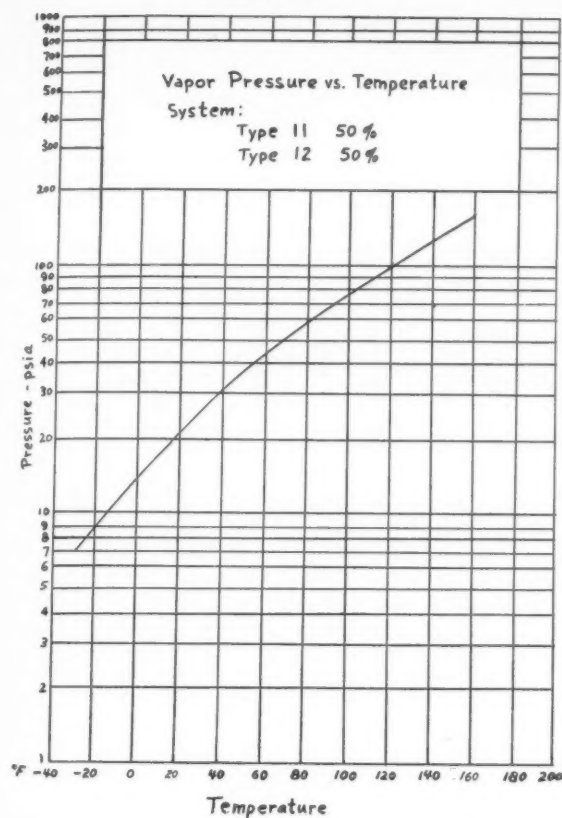
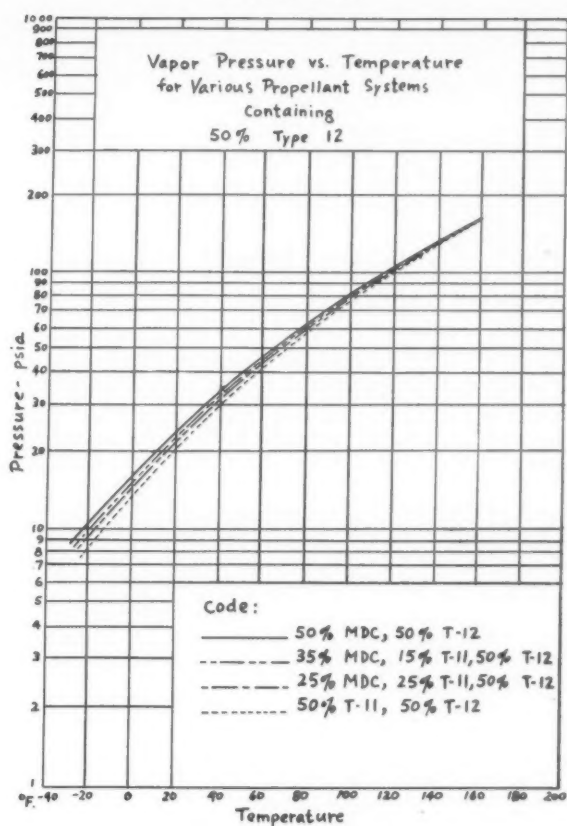


FIGURE No. 6



The curves presented in Figures 1 through 6 were determined with a Bourdon type gauge.

Density

FIGURE 7 presents the densities of the 50/50 methylene chloride Type 12 system at various temperatures and, for comparison purposes, the densities of the 50/50 11-12 system. The densities of the methylene chloride system are lower than those of the Type 11 mixture but the difference is not very large; about 0.07 gms/cc on the average. The slight increase in volume corresponding to this difference is not enough to necessitate any change in standard fill techniques. Aerosol containers may be loaded with methylene chloride mixtures to the same standard weights that have been set up for the 11-12 system.

All densities reported in this paper are absolute densities determined in a pressure pycnometer.

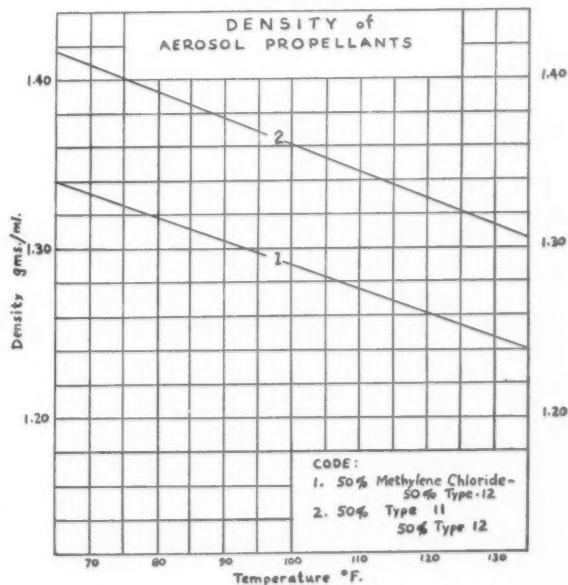
Flammability

METHYLENE chloride is non-flammable and non-explosive. Aerosols prepared with a 50/50 methylene chloride-Type 12 propellant exhibit the same degree of flammability as do aerosols prepared with the 50/50 mixture of Types 11 and 12. The flammability of aerosols packaged with these propellants depends solely on the nature of the active ingredients in the formulation.

To illustrate this fact, two sets of four aerosol products each were tested for flammability. One

set employed a 50/50 11-12 propellant and the other set employed a 50/50 methylene chloride-Type 12 propellant. The four products thus prepared were: 1. straight propel-

FIGURE No. 7



lant (no active ingredients), 2. a room deodorant containing 7.5% dipropylene glycol, 0.5% perfume oil and 92% propellant, 3. an insecticide containing 15% petroleum base concentrate and 85% propellant and 4. a clear acrylic spray containing 5% resin, 25% toluene and 70% propellant. The results of the flammability test are shown in Table I. Extensive data on the flammability of various solvent systems containing methylene chloride have been published elsewhere.[†]

Toxicity

METHYLENE chloride is essentially non-toxic. Its maximum allowable concentration (MAC)* for a long term daily exposure of 8 hours duration is 500 ppm. Higher concentrations may be tolerated for short periods. According to the literature** a concentration of 2,300 ppm can probably be tolerated without any sign of effect for a period of 30 minutes. A concentration of 20,000 ppm is necessary to anesthetize a human in approximately 30 minutes***.

The average size household room is about 13 x 13 x 7 feet or only little more than 1000 cubic feet. Consider a 12 ounce can of an aerosol product such as room deodorant which contains 92% propellant made up of a 50/50 mixture of methylene chloride and Type 12. Few products will contain a larger percentage of propellant. This aerosol can contains about 5.5 ounces of methylene chloride. Should the complete can be emptied in a sealed room of 1000 cu. ft. the concentration of methylene chloride in the room would only be 1460 ppm. This concentration of vapor is only a fraction of the acute toxic con-

[†]De Voldre and Skryps, *Petroleum Processing*, 10, 1746 (1955).

*American Conference of Governmental Industrial Hygienists, *A.M.A. Arch. Indust. Hyg.*, 11, 521 (1955).

**Lehmann and Flury, as cited by Heppel, Neal, Perrin, Orr, and Porterfield, *J. Indust. Hyg.*, 26, 15 (1944).

Also see Moskowitz and Shapiro, *Arch. Ind. Hyg. Occup. Med.*, 6, 116 (1952).

***Henderson and Haggard, "Noxious Gases and the Principles of Respiration Influencing Their Action," Second Edition, Reinhold Publishing Corp., New York, 1943, page 201.

Table I. Effect of Methylene Chloride on Aerosol Flammability

Product	CSMA Flame Propagation Test		CSMA Drum Test	
	Methylene Chloride System	Type 11 System	Methylene Chloride System	Type 11 System
1	2"	1"	Neg.	Neg.
2	2"	1"	Neg.	Neg.
3	8"	8"	Neg.	Neg.
4	20"	19"	Pos.	Pos.

Reproducibility on the flame propagation test is about one inch.

centration and should cause no harm to humans unless the exposure be exceedingly long; a matter of many hours or perhaps days. The heavy aerosol mist that would be present in the atmosphere would make it virtually impossible for anyone to remain in this room for any length of time. In actual practice rooms inhabited by people are not sealed and this concentration would be rapidly diluted; usually in a matter of minutes.

In normal use the quantity of methylene chloride introduced into the room by an aerosol room deodorant such as that described above is very small. The flow rate through a common aerosol valve is about 45 grams of product per minute. Most manufacturers recommend a 5 to 10 seconds burst of deodorant spray per room; this amounts to 3.75 to 7.5 grams of product. The concentration of methylene chloride in a 1000 cu. ft. room containing 3.75 to 7.5 grams of this deodorant will be about 16 to 32 ppm. If the user is a bit overzealous and uses a one minute burst of spray instead of the recommended 5 to 10 seconds burst, the concentration of methylene chloride in the room will be 193

ppm. This is far below the MAC for methylene chloride. The amount of methylene chloride introduced into the room by an aerosol insecticide is even less. Based on a 15/85 insecticide product employing a 50/50 methylene chloride-Type 12 propellant, a one minute burst of insecticide spray in a sealed 1000 cu. ft. room will introduce into the room a quantity of methylene chloride which will make the concentration of this solvent in the room air equal to 180 ppm. As mentioned above, most rooms inhabited by people are not sealed and these low concentrations of methylene chloride are rapidly diluted to lower ones.

Most aerosol products contain less propellant than do the aerosol room deodorants or insecticides and consequently introduce less methylene chloride into the room during use. Methylene chloride, as a propellant component in household type aerosols (insecticides, room deodorants, waxes, paints, etc.), is essentially harmless.

Solvent Power

DUE to the excellent solvent properties of methylene chloride (Turn to Page 145)

Table II. Solubility of Insecticides in the Various Propellants*

Material	Temp. °F	Solubility in gms/100 gms propellant		
		Methylene Chloride	Type 11	Type 12
DDT	77	—	—	0.8
	86	66	10	—
Methoxychlor	68	120	—	—
	86	—	20	—

*Downing, *Soap and Sanitary Chemicals*, 26, No. 7, 115-119 (1950).

Titrimetric Studies of Floor Waxes

SELF-polishing floor wax emulsions are primarily composed of amines, fatty acids, waxes, resins and water. When the emulsion is applied to a floor surface, the water evaporates rapidly, leaving a water resistant, protective coating. Probably no single component of the emulsion has a greater influence on controlling the properties of the coating than the amine.

It has recently been shown (1) that the water resistance of a film can be correlated with the content of a specific amine. This study was made possible by non-aqueous titrations of the dried film. This analytical procedure has been applied to the determination of the acid and amine content of dried films, the acid number of the individual components, and the acid and amine content of wax emulsions.

Data on acid and saponification numbers of waxes have been presented by Fuld (2). These data, obtained in essentially aqueous media, illustrate the inconsistency of the various suppliers' methods and the proposed ASTM methods. The determination of acidity or basicity by titrimetry in nonaqueous media is well established (4, 5, 6). It is a rapid, accurate and simple method.

The selection of solvent and titrant for a nonaqueous system depends upon the conditions of use, upon the nature of the materials being analyzed (analates) and the

application of the method; e.g., whether for research or control. In this work titrants and analate sol-

The choice of solvent for the acidic components was based primarily on its application to dried films. The analate was dissolved in benzene and 2-propanol was added to give electrical conductivity. The titrant was sodium 2-propoxide in Palit's G-H solvent (3). The titration curve for oleic acid in this system is shown in Figure 1, Curve A. It is compared with a titration in ethanol with aqueous sodium hydroxide, Curve B, which is the method generally used. It is interesting to note that the potentiometric and the phenolphthalein endpoints are close together.

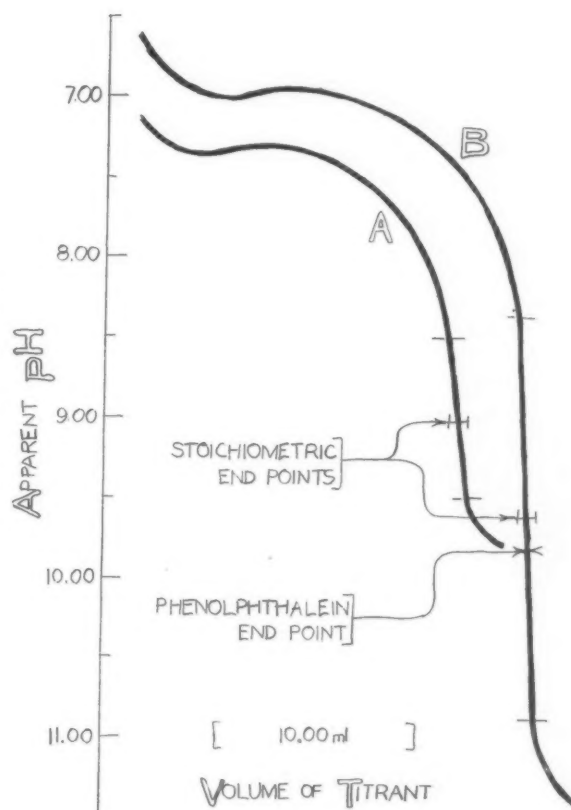


FIGURE 1. Titration curves for oleic acid. A. In benzene — 2-propanol (1:3) titrated with 0.1 N sodium 2-propoxide in 2-propanol — 1,2-ethanediol (1:1) B. In ethanol titrated with aqueous 0.1 N sodium hydroxide.

vents were chosen that could be used for control analyses of raw materials, dried films, or aqueous emulsions.

They differ by only 0.05 ml of 0.1 N alkali.

Oleic acid, waxes, and resins constitute the acidic components of

By John A. Frump and John A. Riddick*

Research Department,
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a floor wax. A section from the titration curves for representative examples of each is shown in Figure 2. The acidity of "Durez 225" is due to a weak acid, probably a phenol.

Two mixtures of the acidic constituents in floor wax were prepared in approximately the ratio used in the basic formula (1) and titrated. The composition of the mixtures, and the calculated and found titrant equivalents are given in Table I.

There is an error of about -5% in the found acidity. This is due to the buffering action of the sodium salts of the stronger acid on the phenolic acidity.

Several solvents and combinations of solvents were studied for titrations of the base constituent. Acetic acid was the most satisfactory. It extracted the amine from the emulsion and dried film. Perchloric acid in p-dioxane was used as the titrant.

A titration curve furnishes much information about the strength of the substance titrated. This is illustrated by the five titration curves in Figure 3. Curve A represents the addition of the ti-

Constituent	Sample 1		Sample 2	
	Amount Present	Titrant Equivalent	Amount Present	Titrant Equivalent
Oleic acid	0.1362 g	9.74 ml	0.1373 g	9.82 ml
Carnauba wax No. 3	0.5996	0.71	0.6003	0.71
Crown 15 wax	0.3015	2.09	0.3002	2.08
Durez 225 resin	0.2937	7.70	0.3010	7.90
Titrant equivalent				
calculated		20.24 ml		20.51 ml
found		19.34 ml		19.50 ml

trant to the solvent; in this instance, perchloric acid titrant to acetic acid. Curve B is the titration curve of a very weak base, an amide, in a 50:50 mixture of acetic acid-acetic anhydride. Curve C represents the titration of a weak base. Curve D represents the titration of a moderately strong base, such as 2-amino-2-methyl-1-propanol (AMP). Curve E is the titration of a strong base, such as potassium hydrogen phthalate.

Whether or not the amine evaporates before the floor wax becomes water resistant, or whether or not a chemical reaction takes

place between the acid and base constituents, can be determined by titration. There are four possible reactions which may occur in an emulsified system containing a fatty acid and an aminohydroxy compound, e.g., oleic acid and 2-amino-2-methyl-1-propanol. Equation 1 represents the salt or soap formation between AMP and oleic acid. By the choice of solvents and titrants each component of the salt may be titrated, as shown in Figure 4. The rise in Curve B at the beginning of the oleic acid titration has been encountered in several other instances.

Equation 2 represents ester formation between AMP and oleic acid. If this reaction takes place,

FIGURE 2. Break sections from titration curves of the acidic constituents. A. Carnauba wax No. 3 refined. B. Crown 15 microcrystalline wax. C. Durez 225 resin. D. Oleic acid (Emersol 220).

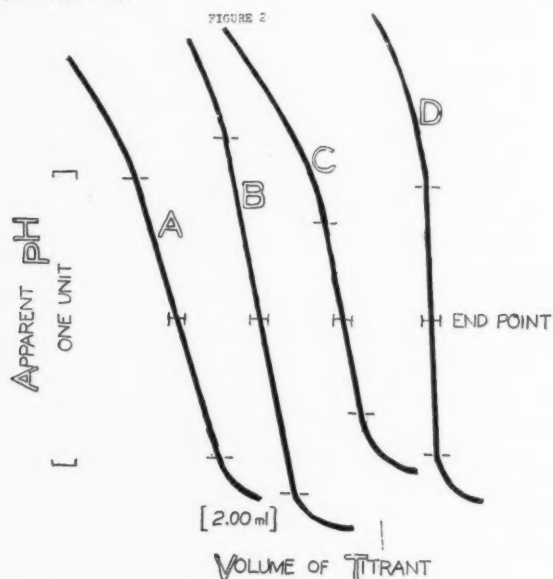
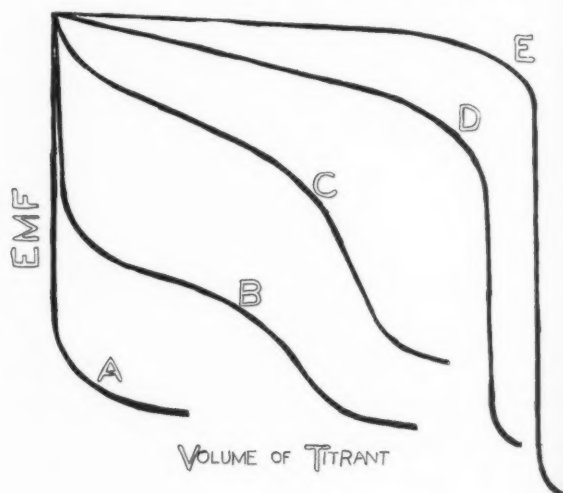
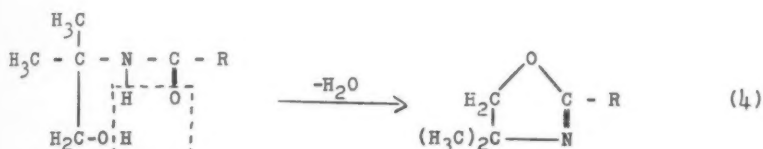
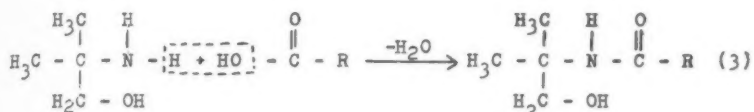
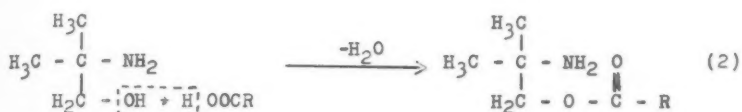
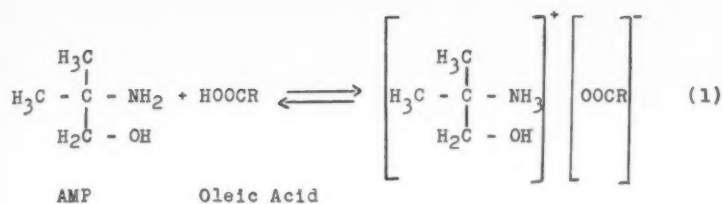


FIGURE 3. Typical titration curves of bases of different strengths. A. Solvent or a compound with no basicity. B. A very weak base; example, the amide of oleic acid and 2-amino-2-methyl-1-propanol. C. A weak base. D. A base of moderate strength; example, 2-amino-2-methyl-1-propanol. E. A strong base; example, potassium hydrogen phthalate.





Equations

all of the amine will titrate but the acid will not.

Equation 3 represents amide formation. The amide group will not titrate in acetic acid, but will give a small break in an equal mixture of acetic acid and acetic anhydride (Curve B, Figure 3). The acid will not titrate. This reaction

may go one step further to form the oxazoline, equation 4. Oxazolines are extremely weak bases in water, but titrate in acetic acid as a relatively strong base (Figure 5).

Based on these considerations and the titration of dried films, the following interpretations may be made:

1. If there is no amine but essentially all of the acid is found, the amine has evaporated.

2. If part of the amine and essentially all of the acid is found, only partial evaporation of the amine has taken place and the remainder is present as the salt.

3. If the amine reaches a minimum value and there is a substantial reduction in the amount of acid, either ester or oxazoline formation has taken place. The ester can be saponified with the sodium 2-propoxide titrant and the excess titrated with perchloric acid. The acid will not be regenerated from the oxazoline under these conditions.

4. If there is a reduction in both the amine and acid, an amide may have formed. The amide may be detected by titration in a mixture of acetic acid and acetic anhydride. If only a small part of the amine has been converted to the amide, a recognizable break will not appear, but a recognizable irregularity will be detected after the amine break.

In these studies with floor wax emulsions the films were dried as in normal use. Under these conditions titrimetric analyses of samples of the films show some loss of the volatile amines over pe-

(Turn to Page 139)

FIGURE 4. Titration curves of the components of AMP oleate salt. A. AMP curve in acetic acid, titrant perchloric acid in p-dioxane. B. Oleic acid in benzene-2-propanol, (1:3) titrant sodium 2-propoxide in 2-propanol-1,2-ethanediol (1:1).

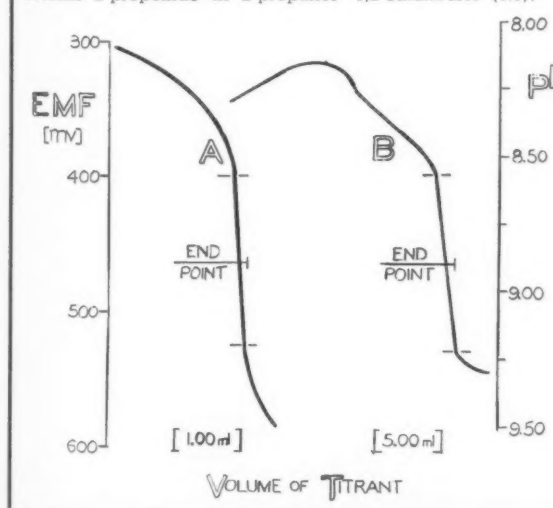
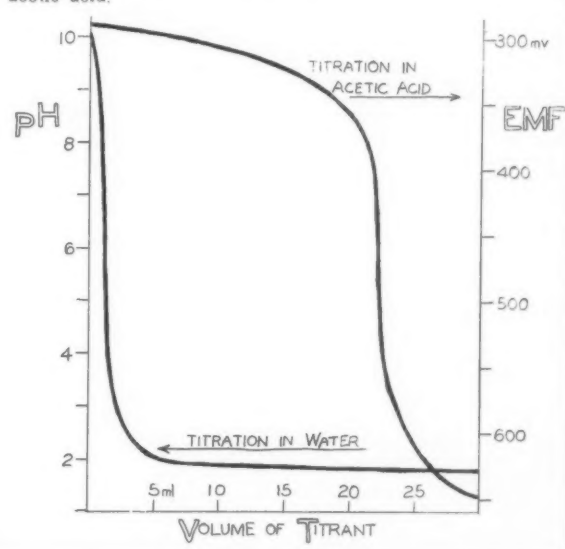


FIGURE 5. Titration curves of oxazoline in water and in acetic acid.



Sesamolin and related compounds as

Synergists for Pyrethrum

PYRETHRUM is one of the few natural products which still maintain a major place in an insecticide market dominated by synthetics. However, its unique properties of rapid knock-down of insects, broad range of effectiveness, and low toxicity to warm-blooded animals would earn pyrethrum only a limited market at the current price of over \$50 per pound for its active ingredients, the pyrethrins, were it not for the tremendous boosting power of the synergists which are normally formulated with it. This boost in insecticidal activity is obtained with practically no increase in mammalian toxicity of the pyrethrum-synergist mixture over that of pyrethrum alone. Of further interest in connection with pyrethrum-synergist combinations is the fact that repeated usage on insects does not evoke the high degree of resistance commonly encountered with most synthetic insecticides.

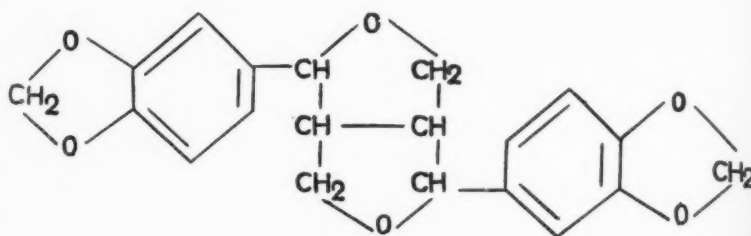
Because of the emphasis on safe control of insects affecting man and his food supply, and especially because of the enactment of Public Law 518 (Miller amendment), the use of pyrethrum-synergist combinations may be expected to increase. Most of the synergists in use today contain the methylenedioxyphenyl group. Piperonyl butoxide (19), sulfoxide (18), *n*-propyl isomer (17), and piperonyl cyclohexene (19) are examples.

Our use of these synergists sprang from a discovery by Eagleson (5) that sesame oil, to the exclusion of all other oils tested, increased the insecticidal potency of pyrethrum. Following this lead Haller, LaForge, and Sullivan (10,

11) initiated a search for the principle in the oil responsible for this activity. This principle was shown to be sesamin.

pyrethrin-like synthetic, cyclothrin, has been shown to be more synergizable than allethrin (13).

After the importance of the



SESAMIN

Investigation of a series of compounds similar to sesamin showed the methylenedioxyphenyl group to be necessary for its activity, although the presence of this group does not in itself assure synergistic effect. The prediction by Haller and his associates that effective synergists containing the methylenedioxyphenyl group would find commercial application has now been so fully realized that one seldom finds pyrethrum being formulated without a synergist.

Of late the synergist problem has been complicated by the commercial production of synthetic pyrethrin-like compounds, such as allethrin, first synthesized by Schechter, Green, and LaForge (16). With this compound and others related to it, such as furethrin (14), synergists were found to be less effective than with pyrethrins. More recently another

methylenedioxyphenyl group, for synergism had been established, the search for synergists was more or less empirical. Compounds were prepared from safrole or isosafrole, the cheapest source of the methylenedioxyphenyl group, and subjected to test.

Because the presence of synergistic activity in sesame oil other than that due to sesamin had been recognized by Haller and his co-workers and other workers (15), in 1953 the author undertook a study of pyrethrum synergists in the oil. Sesamin and sesamolin were shown to account for practically all the synergistic activity of the oil (2). Sesamolin, which had not been known to be synergistic with pyrethrum, proved to be about five times as effective as sesamin against the house fly by the turntable method (8). This finding made it desirable to determine the chemical structure of sesamolin. This has now been done by the author (1) and by two other independent groups of workers, one in England (12) and one in Sweden (6).

(Turn to Page 133)

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*Paper presented before 42nd midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 21, 1956.

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Exterminator's Challenge

Fame, Fortune Await Bug Who Can Make the Grade

By HAL BOYEE

Kansas City—(AP)—Do you have any little six-legged insect friends who would like to gamble their lives on a chance to win \$25,000?

If so, Ralph G. Martin is the man for them to see.

Mr. Martin, president of the Cook Chemical Company, has built his life-long hatred of bugs into a profitable multi-million-dollar business in insecticides.

Bugs are stubborn creatures. The best known way to kill bugs is to pin-point them on a hard surface and then hit them a sharp blow on the head with a hammer.

While this form of insecticide appeals to the hunting instinct in man, it is too time-consuming and gives the bugs too great an advantage. By the time you find and hammer down a bug he has already had 3,612,489 descendants, and is probably ready to die of old age anyway.

The trouble with chemical insecticides is this: A chemical that is one bug's poison in time becomes another bug's meat. They develop an immunity.

Martin pioneered in the distribution of DDT and, later, chlordane, which was up to 10 times as strong as DDT

But strains of bugs now have emerged tough enough to survive either DDT or chlordane.

Martin isn't a man to give up easily. His latest weapon is an insecticide called "Real-Kill," fortified with still another chemical, dieldrin, which he says is 28 times as deadly as DDT.

Martin is so convinced of the strength of his new mixture that he has announced a \$25,000 reward "for the first bug that does not die after being sprayed" with it.

The rules are quite simple. The contest will run for a three-month period starting in June, when bugs are in their best physical and mental condition. Any bug can enter voluntarily or, if you have one that's bashful, you can enter him against his will.

"There is no humbug involved," said Mr. Martin, who expects thousands of contestants from all walks of bug life in America. "If there is no winner—and I don't think there will be—and \$25,000 will be given to a national charity."

Any bug who can stand up to the spray and walk away on his own six feet—or eight, if it should be a spider—stands to collect a lot more than the \$25,000. That might turn out to be pocket change.

This news story dramatically emphasizes the faith of Cook Chemical Company in its new formulation of "Real Kill"—containing Sulfoxide.

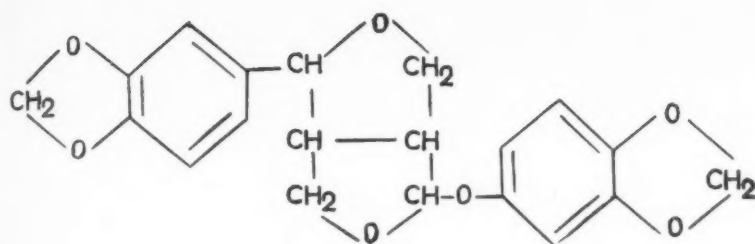
Sulfoxide — product of S. B. Penick and Company — is an outstanding effective synergist . . . safe . . . non-irritating . . . with a mild, pleasant odor.

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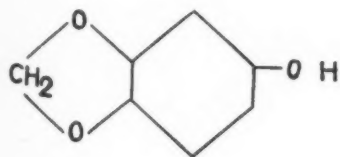


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SESAMOLIN

Both sesamin and sesamol contain two methylenedioxyphenyl groups. They are attached to a central nucleus which is the same for both compounds. Sesamol differs from sesamin in having one of its methylenedioxyphenyl groups attached to the central nucleus through an oxygen atom. In other words, it has a 3,4-methylenedioxyphenoxy group in place of one of the 3,4-methylenedioxyphenyl groups of sesamin. Because this difference resulted in such a marked increase in synergism, a series of methylenedioxyphenoxy compounds were prepared as candidate synergists. It was desirable that these compounds have not only high synergistic activity but also adequate solubility in kerosene, a widely used base for insecticide sprays. Sesamin and sesamol have the disadvantage of being rather insoluble in kerosene, so that auxiliary solvents are necessary to hold these compounds in solution. More than 60 compounds were prepared (3), all derivatives of sesamol.



SESAMOL

The compounds were tested with pyrethrins and allethrin against the house fly by the turntable method (9).¹ In these tests sprays were made up to contain 10 parts of syn-

ergist to one part of pyrethrins or allethrin in deodorized kerosene.

Five classes of sesamol derivatives were prepared—ethers, esters, carbamates, arylsulfonates, and acetals, as shown in the accompanying list.

A wide variety of groups, 26 in all, were attached to sesamol as ethers. These compounds included alkyl, cycloalkyl, alkenyl, alkoxyalkyl, polyalkoxyalkyl, benzyl, and halogen-substituted derivatives. Almost all the ethers were synergistic to some degree. Exceptions were the trimethyl silyl ether and acetic acid ethers. The best synergists contained polyalkoxyalkyl groups—for instance, the 2-(2-butoxyethoxy)ethyl and the 2-(2-ethoxyethoxy)ethyl ethers of sesamol.

Sixteen carboxylic acid esters were prepared, including esters of alkyl, cycloalkyl, heterocyclic, aryl and substituted arylcarboxylic acids in addition to several carbonates and one chrysanthemumate. These compounds exhibited practically no synergism. Only the chrysanthemumate demonstrated mild synergistic activity.

On the other hand, four arylsulfonic acid esters did show activity, the benzenesulfonate of sesamol exhibiting a rather high degree of synergism.

Five carbamates of sesamol showed no appreciable synergistic activity and had the further disadvantage of being rather insoluble in kerosene.

Finally a series of acetals were prepared, and these compounds proved to be the best synergists in this study. Included were alkyl, alkoxyalkyl, polyalkoxyalkyl and heterocyclic acetals. The best com-

pounds in this group were of the polyalkoxyalkyl type, of which the 2-(2-ethoxyethoxy)ethyl 3,4-methylenedioxyphenyl acetal of acetaldehyde is the best example. This acetal is readily soluble in kerosene and in most organic solvents. Pharmacological data on this compound are not yet available.

An examination of the synergistic effects of sesamol derivatives showed that synergism was much greater with natural pyrethrins than with allethrin. However, the results were generally parallel; that is, a compound synergistic with one was synergistic with the other, although not always to the same degree. The hope that one of the compounds would be an especially good synergist with allethrin was not realized.

Because the turntable and Peet-Grady methods sometimes give different results and because the latter method gives additional information on knockdown of synergized sprays, 8 of the 43 compounds found to be synergistic with pyrethrins and allethrin (9) were tested by the Peet-Grady method (7).² The synergist piperonyl butoxide was compared with the compounds under test. Sprays were made up to contain 2 mg. of synergist and 0.4 mg. of pyrethrins or allethrin per milliliter of deodorized kerosene.

Again the 2-(2-ethoxyethoxy)ethyl 3,4-methylenedioxyphenyl acetal of acetaldehyde was the best synergist with both pyrethrins and allethrin. Four of the eight compounds exceeded the performance of piperonyl butoxide with pyrethrins, and four were better than piperonyl butoxide with allethrin. In general, knockdown and mortality results were parallel.

Currently we are testing these synergists against other insects, including mosquitoes and cockroaches. Our results thus far are very encouraging.

Of the various derivatives of sesamol, the acetals appear to be the

¹ Paper presented at the meeting of the Entomological Society of America at Cincinnati, Ohio, Nov. 28 to Dec. 2, 1955.

² Paper presented at the Eastern Branch Meeting of Entomological Society of America at Baltimore, Maryland, November 21-22, 1955.

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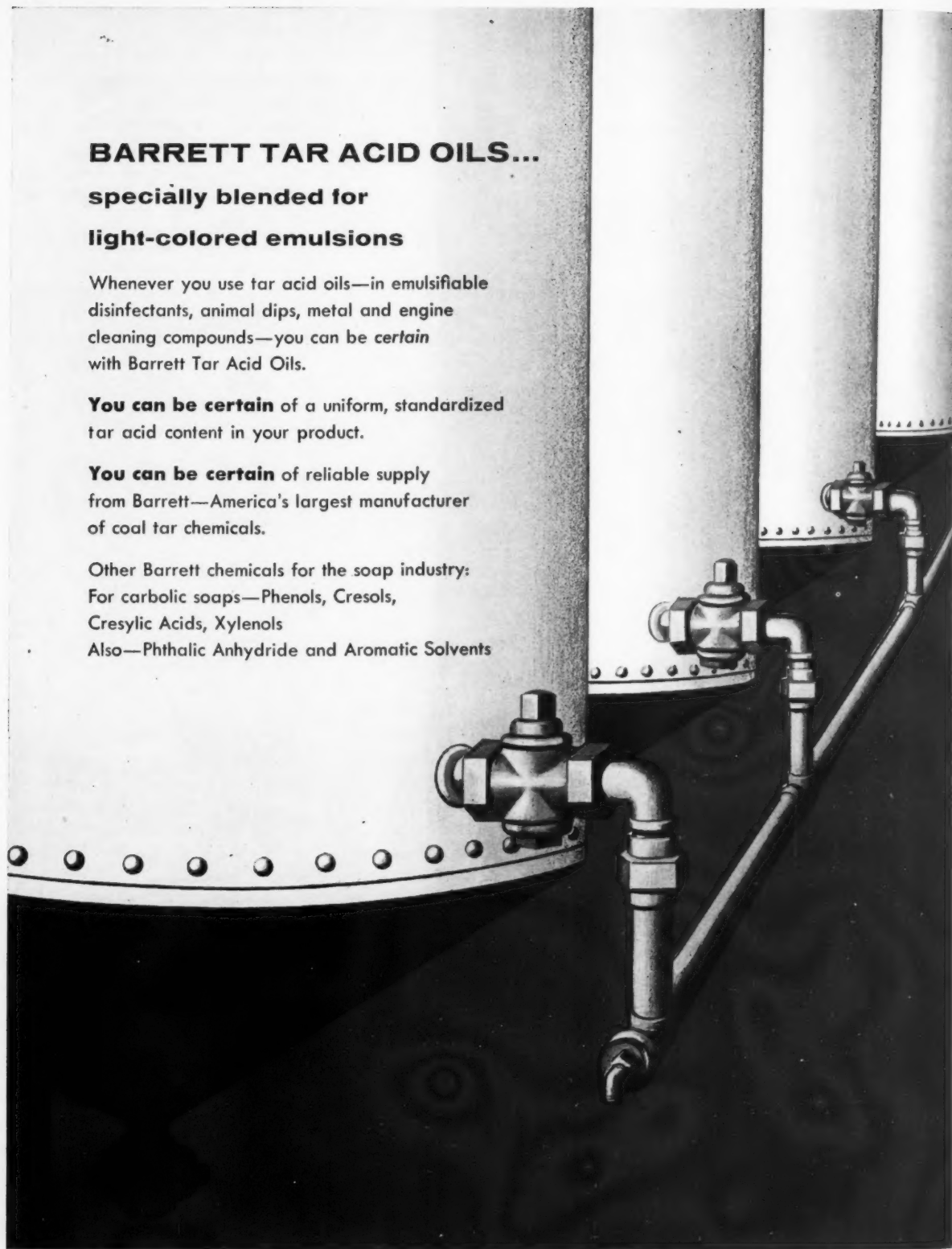
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Sesamol Derivatives Tested as Synergists

Ethers:

Propyl
n-Butyl
n-Amyl
 Isoamyl
 Cyclopentyl
 Cyclohexyl
 2-*n*-Octyl
 2-Ethyl-*n*-hexyl
 2-Cyclohexylethyl
 2-*n*-Butoxyethyl
 2-(2-Chloroethoxy)ethyl
 2-(2-Ethoxyethoxy)ethyl
 2-(2-*n*-Butoxyethoxy)ethyl
 Allyl
 2-Chloroallyl
 3-Chloroallyl
 Acetic acid
 Acetic acid, *n*-butyl ester
 Trimethyl silyl
 Benzyl
o-Chlorobenzyl
p-Chlorobenzyl
 2,4-Dichlorobenzyl
 3,4-Dichlorobenzyl
p-Bromobenzyl
p-Nitrobenzyl
 2,2'-Diethyl ether (disesamol ether)

Esters:

Acetate
 Propionate
n-Butyrate
 Caproate
 Palmitate
 Cyclohexyl carboxylate
 Furoate

Chloroacetate
 Ethyl carbonate
n-Butyl carbonate
 Isobutyl carbonate
 Benzoate
o-Ethoxybenzoate
o-Chlorobenzoate
p-Chlorobenzoate
 Chrysanthemumate (synthetic)

Sulfonates:

Benzenesulfonate
 β -Naphthalenesulfonate
p-Toluenesulfonate
p-Chlorobenzenesulfonate

Carbamates:

N-Phenyl
N-*o*-Tolyl
N-*m*-Tolyl
N-*p*-Tolyl
N-1-Naphthyl

Acetals*:

Acetaldehyde, ethyl R acetal
 Acetaldehyde, *n*-butyl R acetal
 Acetaldehyde, isobutyl R acetal
 Acetaldehyde, 2-chloroethyl R acetal
 Acetaldehyde, 2-*n*-butoxyethyl R acetal
 Acetaldehyde, 2-methoxyethyl R acetal
 Acetaldehyde, 2-(2-ethoxyethoxy) ethyl R acetal
 Acetaldehyde, 2-ethylhexyl R acetal
 Acetaldehyde, 2-(2-butoxyethoxy)ethyl R acetal
 2-RO-tetrahydropyran
 2-RO-*p*-dioxane
 2-Ethoxy-5-RO-tetrahydrofuran

* R = 3,4-methylenedioxyphenyl,
 RO = 3,4-methylenedioxyphenoxy.

most promising candidates for synergists of commercial value. Thus the ethoxyethoxyethyl acetal may be prepared in close to quantitative yield simply by adding sesamol to the vinyl ether of ethyl carbitol (Carbide and Carbon) in the presence of an acidic catalyst. Of the starting materials, the vinyl ether is a potentially inexpensive material. The other starting material, sesamol, has been prepared in about 60% yield from piperonal (3, 4). The commercial synthesis of the synergistic acetal hinges on an inexpensive synthesis of sesamol.

The author expresses his gratitude to W. A. Gersdorff, J. H. Fales, P. G. Piquett, O. F. Boden-

stein, and W. N. Sullivan, all of the Entomology Research Branch of the U. S. Dept. of Agriculture, for the entomological data given in this presentation.

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Glass Aerosol Pressure Testing

CSMA Approves a Tentative Method for Determining the Internal Pressure of Glass Aerosol Products.

PRESSURE is one of the most important criteria of an aerosol product. For the glass aerosol in particular an increase in internal pressure provides greater latitude in formulation, improved operating characteristics at slightly below room temperatures and the use of less expensive propellant combinations. Beyond a certain point, however, increasing pressure creates a hazardous condition from the standpoint of possible breakage and effects thereof.

Since the Interstate Commerce Commission requires a metal container for compositions having pressures above 25 lbs. psi-gauge at 70°F, this value becomes the limiting pressure for glass aerosols. There is a very definite trend to limit pressures to 15 lbs. psi-gauge at 70°F for uncoated glass aerosols and to specify plastic sheathed glass for pressures up to the 25 lbs. psi-gauge maximum at 70°F. These figures are also supported by glass bottle suppliers, major fillers and most merchandisers.

No standard method for determining the internal pressure of glass aerosols has been presented to the industry. One is urgently needed. Ideally, such a method should be simple and rapid; suitable for production control. The present method appears to have these qualifications.

Apparatus

1. Pressure gauge adapter: The specifications of this adapter are given in Plate 1. The suggested material is stainless steel, although

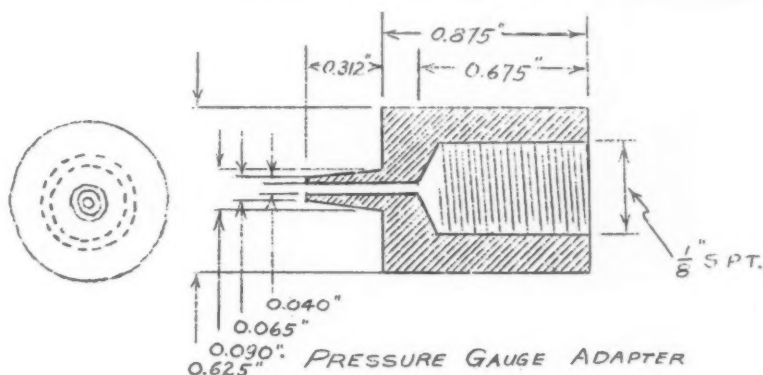
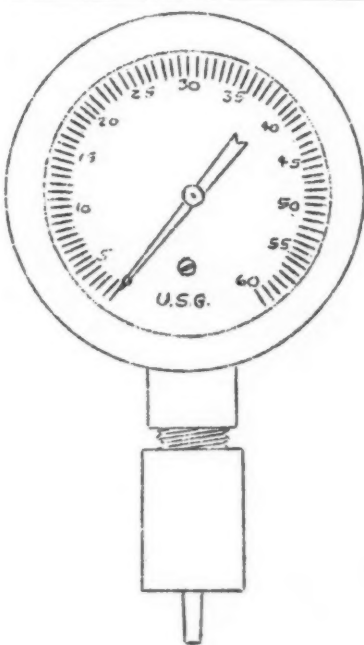


Plate 1.

brass has been used.* The tapered section is designed to make gas-tight

*A suggested source for pressure gauge adapters is Modern Machine Shop, 123 North Hazel St., Danville, Ill.

Plate 2.



contact with the upper stem of glass aerosol valves by insertion within the stem bore. Where the hole through the upper stem is not circular in cross-section, the use of a rubber sealing washer is suggested.**

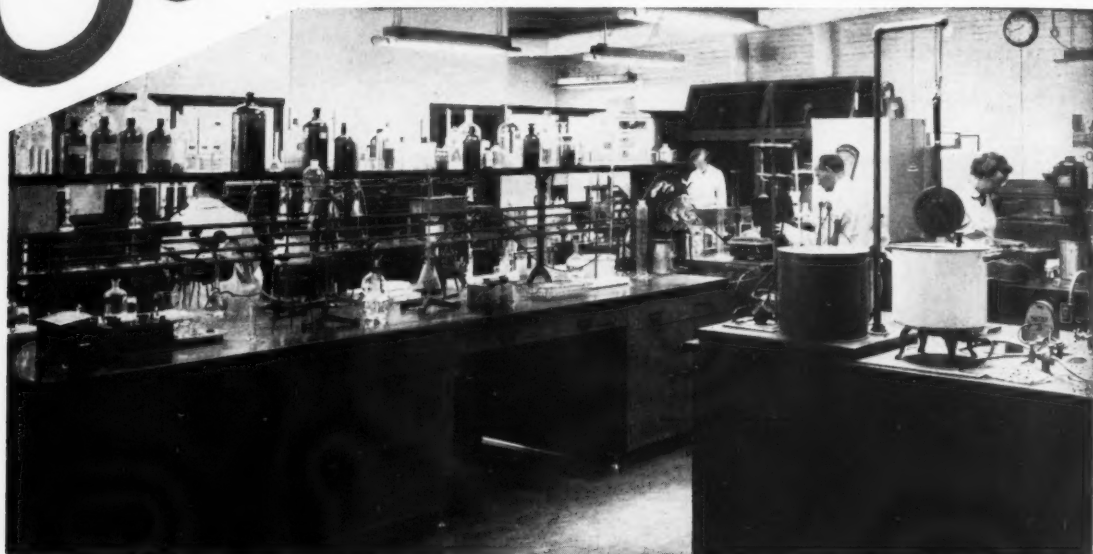
2. Pressure gauge: This gauge is shown as part of the assembly in Plate 2. A two-inch laboratory test gauge is suggested, range 0-60 lbs. psi-gauge graduated in one pound divisions. The thread on the gauge stem must match that on the pressure gauge adapter. The recommended gauge is U. S. Gauge Figure 500S, 2", 1/8" lower make connection, 0-60 lbs., specification No. 28208.

3. Constant temperature water bath: The bath should have a stirring apparatus and should be of sufficient size to hold several dispensers. It should be deep enough to allow these dispensers to be completely submerged and surrounded

**The adapter has been used successfully with valves for glass aerosols made by Risdon Manufacturing Co., Precision Valve Corp., and Valve Corp. of America.

Control

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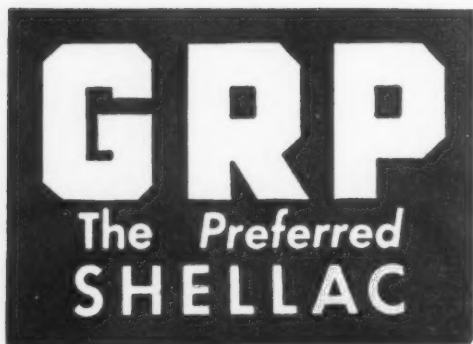


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with at least one inch of water. This will require a perforated shelf or a screen above the floor of the bath. The temperature should be $70^{\circ} \pm 0.5^{\circ}\text{F}$.

4. Barometer: Any standard model.

Procedure

1. Place uncoated glass aerosols in water bath at least thirty minutes before testing. Plastic sheathed aerosols should remain in the bath for at least one hour prior to testing.

2. Shake dispenser vigorously under water in the bath for one minute. Insert gauge assembly, actuate valve, and shake assembly until pressure reading becomes constant. Record pressure.

3. Remove gauge assembly and shake aerosol under water for one minute. Reinsert gauge system, actuate, and record pressure; shaking as before.

4. Repeat step three to obtain a third pressure reading.

5. Record barometric pressure.

Calculations

The three pressures obtained in this procedure will represent a series which diminishes in fairly linear fashion. In order to arrive at the true pressure, these readings are extrapolated to give an "O"th reading, as in the example:

First Reading: 14.0 lbs. psi-gauge
Second Reading: 13.7 lbs. psi-gauge
Third Reading: 13.4 lbs. psi-gauge
Extrapolated "O"th Reading: 14.3 lbs. psi-gauge. This is the true pressure, under the conditions of measurement.

The barometer is then read and the gauge reading corrected to give the true gauge pressure if necessary.

Discussion

Although the apparatus is designed to provide as small an internal volume as possible, still, a certain amount of gas or pressurized liquid is withdrawn from the test

dispenser at each reading. For airless samples the change in pressure between readings is due only to a slight decrease in propellant concentration in the liquid phase, as required to re-establish thermodynamic balance. For samples containing air, both air and propellant gas are withdrawn from the solution to bring the pressure of the expanded head space to new equilibrium condition. Thus the difference of pressure between readings is greater for air-containing samples. In very extreme cases the difference may amount to 2.0 psi. at 70°F . and the pressure differential begins to swing from a linear relationship to a hyperbolic function as a limiting case.

The accuracy of results obtained using the extrapolation method has been checked using a large number of compositions. In such tests the formulations were prepared in metal containers fitted with pressure gauges. When pressures were determined using the procedure described above, variations between the known and extrapolated "O"th reading were 0.2 psi. or less. The greater error was with products of high air content.

It is felt that results obtained by this test method are accurate to within ± 1.0 psi. at 70°F .

Modification of Method

This procedure can be adapted to production or routine pressure checking with but slight loss in accuracy. For a given production run an average figure is determined by experiment for the pressure increment between the "O"th and first readings. This increment is then automatically added to all other consistent first readings throughout the run. Variations of the first reading will in themselves be indicative of production anomalies, such as faulty evacuation of bottles before pressure loading, or the presence of entrapped air resulting from below normal mix temperatures during refrigeration filling operations.

The above proposed method

for the testing of glass aerosols was developed by the project committee for determining pressures in glass aerosols of the Chemical Specialties Manufacturers Association. It has been duly submitted to and approved by the Glass Aerosol Scientific Sub-Committee of the Aerosol Division, C.S.M.A.

— ★ —

Lanolin Plus Names Carsch

Gustav Carsch was appointed recently as chief perfumer for Lanolin Plus, Inc., Chicago. Mr. Carsch was previously chief perfumer of Toni Co., Chicago.

Floor Waxes

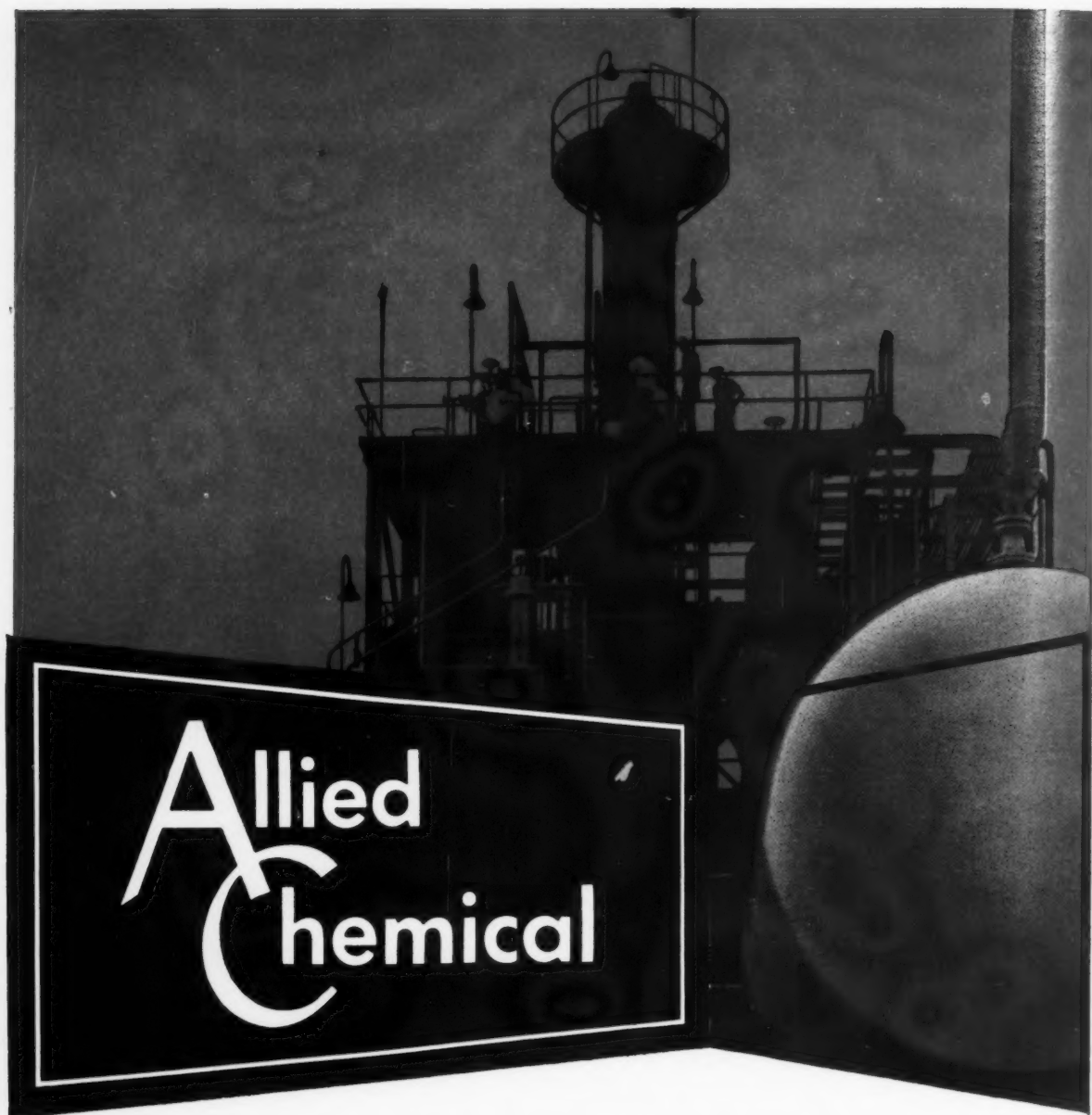
(From Page 127)

amine content has approached its minimum level. The possible formation of appreciable amounts of ester, amide or oxazoline is therefore eliminated.

The methods described in this paper are based on nonaqueous titrations. From these methods the acid and amine content of dry floor wax films, the acid number of the individual components, and the acid and amine content of wax emulsions can be determined with a high degree of accuracy.

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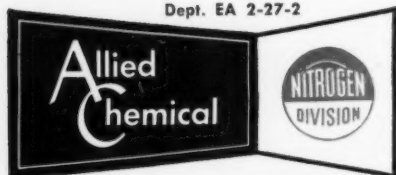


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Aerosol Test Methods . . .

CSMA Aerosol Division accepts tentative methods for determining solids content of aerosol coatings, and volatile-non-volatile content of aerosols. A tentative glossary of aerosol terms also accepted.

TENTATIVE methods for determination of solids content of aerosol coatings and for determining the volatile-non-volatile content of aerosol products were accepted by the Aerosol Division administrative committee of the Chemical Specialties Manufacturers Association, New York, it was announced recently. At the same time, CSMA announced that a tentative glossary of terms used in the aerosol industry had been accepted by the Aerosol Division's administrative committee. Earlier, the scientific committee of the Aerosol Division had adopted the two tentative

methods and the tentative glossary of terms.

The "Tentative Method for Determining the Volatile-Non Volatile Content of Aerosol Products" by densimetric analysis was presented by the Insecticides and Room Deodorants Standard Methods Subcommittee, Scientific Committee, Aerosol Division. Members of the subcommittee include: Montfort A. Johnsen, chairman, J. J. Buchanan, Clarence Clapp, R. V. Sharpless, Norman Templin, W. H. Walker and R. A. Fulton, advisor.

The complete text of the tentative method follows:

A Tentative Method for Determining the Volatile-Non-Volatile Content of Aerosol Products (Densimetric Analysis)

Introduction

TWO methods have been developed for determining the volatile-non-volatile composition of insecticidal and room deodorant formulations. Because of limitations inherent in each, they are regarded as complementary. The densimetric method is based on the fact that, under isothermal conditions, the density of an aerosol formulation is almost a linear function of the volatile or non-volatile content. The vacuum distillation method utilizes the percentage weight loss of a sample held under moderate vacuum and ambient temperatures as its basis.

Because of the celerity with which densimetric determinations may be run, the method achieves primary significance as a production control operation. The density of test samples must be compared with that of standard samples before the relation of density to volatile or non-volatile content is possible. It is desirable to construct a graph or (preferably) a table of composition vs. density, using several samples of accurately known composition. The test sample densities may then be converted to volatile or non-volatile composition.

Apparatus

1. Metal or glass cannister: Diameter 3 to 4 inches; height about 16 inches.
2. Metal or glass cylinder: Diameter 1 inch minimum; height about 16 inches. A metal cylinder requires close attention to final filling level but is preferred by experienced operators. A 2½ inch diameter, 3/16" thick copper disc, to which a 16 inch long, 1 inch inside diameter copper pipe has been brazed has been found to be very satisfactory. The weight of the metal cylinder should be such that it will overcome the buoyant effect of the cooling bath in which it will be immersed.
3. Hydrometer set: Range to cover anticipated compositions. Length 14½ inches minimum. Scale 0.001 or 0.002 gm./ml. per division.
4. Thermometer: Scale — 30°F. to 120°F. For three inch immersion. The thermometer should be inserted through a cork large enough to rest upon the rim of the cylinder.
5. Weighing ring: (Optional) Bore 1½ inches. Weight about 200

grams. May be slipped over glass cylinders to provide added weight in counteracting buoyancy of cooling bath.

Procedure

1. Place metal or weighted glass cylinder in cannister. Pour dichlorodifluoromethane into cannister until liquid level rises to within ½ inch of cylinder top.
2. Chill test sample to approximately —20°F. while still in aerosol container. This is conveniently done by submerging the aerosol in a reserve quantity for dichlorodifluoromethane. Puncture dispenser and pour contents into cylinder, allowing for later introduction of hydrometer in order to prevent overflow.
3. Pre-chill thermometer by momentary immersion in cooling bath. Adjust cork position on stem to give three-inch immersion and then check temperature of aerosol composition. Temperature should read —20°F. before proceeding.
4. Pre-chill hydrometer by momentary immersion in cooling bath. Raise, allow to dry, and immediately dip into test solution. Do not permit hydrometer to bounce. This causes frost to form on the stem. Read and record density.
5. Flush cylinder with propellant and allow to stand inverted in freezer between analysis. Propellant may be maintained in deep freeze for short periods or between samples during continuous operation, although small amounts of additional material will have to be added from time to time. For longer periods it is more convenient to store propellant in pressure containers.

Calculations

To determine composition from density reference data must be available. To acquire such data a minimum of two known samples; one containing about 1% more volatile material than the required amount; the other containing about 1% less; are tested by the above procedure and densities thus determined. Over a small composition

range (up to 5%) density may be said to vary linearly with composition. Accordingly, a graph may be constructed, or the companion equation:

$$K) \text{Density} \begin{matrix} \text{standard} \\ \text{test sample} \end{matrix} - \text{Density} \begin{matrix} \text{standard} \\ \text{test sample} \end{matrix} = \begin{matrix} \text{standard} \\ \text{test sample} \end{matrix} \begin{matrix} \text{Density} \\ \text{Density} \end{matrix}$$

derived, where K is the slope. More conveniently a short table can be worked out, giving densities for 0.1% increments on both sides of the optimum composition.

An alternate method is often used, particularly for formulations having high propellant content, such as a room deodorant. The density of a required composition standard sample is determined. Then the density of the pure propellant is either determined or found in the manufacturer's literature. These figures are treated as described above.

Discussion

Many minor variations may be applied to this method at the discretion of the individual. A shorter (6¼ inch) hydrometer may be used, but with some loss of accuracy. Propellants other than dichlorodifluoromethane may be used, but generally at greater expense. Because of the time required to reach the temperature of -20°F. (Actual B.P. CCl₂F₂ = 20.4°F. at 1.0 atm.), some operators use -19°F. as the measuring temperature. Normally, a 1°F. temperature error imparts about a 0.1% composition error in the determination. A low temperature toluene or alcohol thermometer may be used if it is considered desirable to read temperatures without lifting the instrument from the cylinder.

Aerosol compositions having pressures of 40 psi-gauge or less at 70°F. have been found to lose weight at the rate of 0.1% in from 5 to 20 minutes, depending primarily upon the propellant content, when held at -20°F. in a cylinder. The method as described cannot be recommended for compositions

boiling at less than 0°F. or having pressures greater than 40 psi-g. at 70°F.

Unusually volatile formulations are determined using coolant liquids boil-

ing at temperatures lower than -20°F. Mixed coolants may be employed but conditions must be identical when determining standard and test samples. Temperatures below about -40°F. should be avoided because of excessive frost formation and possible separation, gelation or solidification of the aerosol formulation.

For aerosols carrying about 90% propellant the composition changes by about 0.1% for a density change of 0.0011 gm./ml. At 80% propellant the corresponding density change is only 0.00095 gm./ml.

Certain compositions—notably residual insecticide types—are found to deposit toxicants when chilled to -20°F. However, this does not seem to impair the accuracy of analysis; probably because the standard determinations are subject to the same difficulty.

While developed for insecticides and room deodorants, the method is not limited to the analysis of these formulations but has been used with complete success with mothproofers, insect repellents and even aerosol colognes.

The most widespread application of the densimetric determination is in production pre-checking of single-staged aerosol batches. Samples are withdrawn from mixing tanks into aerosol containers fitted with screw type shells and attached "Tap-A-Can" valves. These samples must be approved before lots are used.

Respectfully submitted,
Insecticide Standard Methods
Sub-committee
Aerosol Scientific Committee
Aerosol Division
C.S.M.A.

of adoption, D. S. Tillotson, chairman, J. G. Ellis, L. M. Garton, Montford A. Johnsen, John J. McNally, Donald D. Menhenett, C. B. Miller, Joseph C. Pizzuro, and P. A. Sanders.

The complete text of the tentative method follows:

Tentative Method for Determination of Solids Content of Aerosol Coatings

Summary

KNOWLEDGE of the solids content of an aerosol coating can be useful information for predicting the performance of the product. In general, coatings of high solids content are to be preferred because they give greater coverage and protection to the substrate being coated. Various techniques are available for determining the solids content of conventional coatings, but a

suitable method for aerosol coatings was not available heretofore. It was desirable, therefore, to develop a simple method for aerosol coatings. A limited amount of experimental work indicates that good results can be obtained with a minimum of technique and equipment. The method is described below.

Apparatus

1. Flexible aluminum foil flat-bot-

tomed dish, 5 in. x 4 in. x 1¼ in. (depth). (can be obtained from Quaker Products Co., Philadelphia.)

2. Oven maintained at 120°C.
3. Torsion balance with a sensitivity of 2 mg. and a scale graduated in divisions of 10 mg.
4. Facilities for obtaining a temperature of 0°C. for at least 2 hours.

Procedure

Tumble or agitate dispensers of the aerosol coating product for at least 24 hours prior to testing. Weigh an aluminum dish with the cover and a dispenser of the aerosol coating product under test (at room temperature). Store both the dish and the dispenser at 0°C. for 2 hours, then shake the dispenser for 5 minutes by hand. After shaking, spray approximately a 10-gram sample of the aerosol coating product into the aluminum dish from a distance of approximately 6 to 8 inches. Allow the dispenser to rise to room temperature (in 30 minutes), then reweigh. Place the cover of the aluminum dish on loosely, allow the dish to come to room temperature in about 30 minutes (this will allow the retained propellant to evaporate), then place the dish (uncovered) in an oven at 120°C. for 3 hours. Weigh the dish after it reaches room temperature (in 30 minutes).

Calculation of Solids Content

The solids content of product under test is then calculated as shown below.

$$\frac{\text{Weight of residue in aluminum dish} - \text{Loss in weight of aerosol dispenser}}{\text{Weight of residue in aluminum dish}} \times 100 = \% \text{ Total Solids (Solution basis)}$$

Duplicate determinations should agree within 0.2%.

Standard Lacquer

The nitrocellulose metal lacquer shown below (formulated for aerosol application) was used in the development of the above procedure. Good agreement was obtained among several determinations on the same dispenser.

The lacquer should be used as control.

Nitrocellulose Metal Lacquer

RS nitrocellulose, ½ sec.	5
Cellolyn 502 (60% in Xylene)	9
Dibutyl phthalate	2
RBH dispersion No. 1²	24
Methyl isobutyl ketone	49
Butyl cellosolve	5
Isopropanol	3
Alcohol, 2B	3
	100

Calculated Total Solids,
% by Weight 21.0

Aerosol Application of Above Lacquer

(Package in a 12-oz. dispenser with a typical aerosol valve¹)
Above lacquer 170 grams

Freon 12 170 grams
Calculated total solids,
% by Weight 10.5
(1) The Precision valve, Model I (Pre-

cision Valve Co.) and the Danvern
aerosol valve gave good results.
(2) Can be obtained from RBH Disper-
sions Division of Interchemical Corp.

THE tentative "Glossary of Terms Used in the Aerosol Industry" was presented by the Definitions and Terms as Applied to Aerosols Subcommittee, Scientific Committee, Aerosol Division. Subcommittee members included R. C.

Downing, chairman, A. M. Adler, John F. Brandenburg, Carroll A. Clark, L. M. Gordon, George Hartz, W. A. Knapp, and R. A. Fulton, advisor.

The complete text of the tentative glossary follows:

Glossary of Terms Used in the Aerosol Industry (Tentative)

Active Ingredient—component of aerosol formulation that produces the specific effect for which the formulation is designed.

Aerosol—a suspension of fine solid or liquid particles in air or gas, as smoke, fog, or mist. As defined by the Department of Agriculture, 100 percent of the particles in an insecticidal aerosol spray must have a diameter less than 50 microns and 80% of the particles must have a diameter less than 30 microns.

Aerosol Insecticides Storage Test—tentative official method (sponsored by CSMA) for determining storage characteristics of aerosol insecticides.

"Aerosol" Product—self-contained sprayable product in which the propellant force is supplied by a liquefied gas. Includes space, residual, surface coating, foam and various other types of products but does not include gas-pressure-ized products such as whipping cream. The term aerosol as used here is not confined to the scientific definition.

Aerosol Test Method for Flying Insects—official bio-assay method (sponsored by CSMA) using houseflies and OTA.

Auxiliary Solvent—liquid material used in addition to the primary solvent. Generally used to replace part of the primary solvent to produce some specific effect or as a matter of economics.

Chemical Attack—chemical reaction or solvent effect, causing failure or deterioration of plastic and rubber parts, organic coatings, metals, or lithography involved in the completed package.

Compatibility—broad term meaning that the various components of an aerosol formulation can be used together without undesirable physical or chemical results.

Concentrate—a basic ingredient or mixture of ingredients to which other ingredients, active or inactive, are added.

Container—metal, glass or plastic shell in which an aerosol formulation is packaged.

Corrosion—chemical alteration of the metal parts of container or valve. May lead to package failure and/or product deterioration.

Cosolvent—solvent used to improve the mutual solubility of other ingredients.

Crimp—one operation by which

the valve may be permanently seated in some aerosol containers.

Density—weight of a given volume of material at a specified temperature.

Delivery Rate—weight of mixture discharged from dispenser per unit of time at a specified temperature. Usually expressed as grams/second at 80°F.

Dispenser—metal, glass, or plastic shell with valve from which an aerosol or pressurized formulation is dispensed.

Eductor Tube—tubing connecting the lower portion of container or dispenser with valve. Sometimes misnamed "syphon tube" or "dip tube."

Foam Product—aerosol formulation containing a solution or emulsion which is dispensed in a highly expanded fluffy form by a liquefied gas propellant.

Head Space—volume in upper portion of dispenser not filled with liquid contents. Usually expressed as percent of total volume of dispenser at a specified temperature.

High Volatile Ingredients—see Volatile Ingredients.

Inert (or Inactive) Ingredient—component of an aerosol formulation that does not contribute to the specific effect of the formulation. In some cases, may be quite arbitrarily defined. For example, with insecticides, only the propellants are considered as inert ingredients.

Low Volatile Ingredients—see Nonvolatile Ingredients.

Metering Valve—valve that delivers a definite, limited amount of aerosol formulation each time the valve mechanism is operated.

Nonvolatile Ingredients—components of an aerosol formulation with a vapor pressure less than atmospheric pressure (<14.7 lbs./sq. in. absolute) at a temperature of 105°F. Sometimes called *low volatile* components.

Official Test Aerosol, or OTA—a standard insecticide dispenser and formulation prepared by CSMA for use in Official Aerosol Test Method for Flying Insects.

Particle Size—diameter of solid or liquid particles expressed in microns (thousandths of a millimeter).

Pressure—internal force per unit area exerted by any material. Since the pressure is directly dependent on the temperature, the latter must be specified.

The pressure may be reported in either of two ways:

(A) Absolute pressure—the total pressure with zero as a reference point. Usually expressed as pounds per square inch absolute (psia).

(B) Gage pressure—the pressure in excess of atmospheric pressure. Under standard conditions at sea level, the numerical value of the absolute pressure is 14.7 higher than that of the gage pressure. The gage pressure is usually expressed as pounds per square inch gage (psig).

Product Deterioration—chemical reaction or physical change within or between components considered compatible in original formulation. May be due to time or temperature of storage or other factors.

Product Formulation—specific formulation of completed product, including propellant(s). Usually expressed as weight/weight (w/w) percent.

Propellant—liquefied gas with a vapor pressure greater than atmospheric pressure (>14.7 lbs. per sq. in. absolute) at a temperature of 105°F.

Solubility—the extent to which one material will dissolve in another. Generally expressed as percent by weight. May also be expressed as percent by volume or parts per 100 parts of solvent by weight or volume. The temperature should be specified.

Solvent—liquid part of an aerosol formulation used to dissolve solid or other liquid parts.

Spray—the dispersed discharge from an aerosol-type dispenser in the form of small droplets or particles. Does not include foam-type discharge.

Spray Coating—aerosol spray product for surface application, which leaves a residual clear or pigmented finish for protective or decorative purposes.

Stability—ability of a product to maintain its original characteristics over extended storage periods, under normal variations in temperature conditions.

Synergist—an auxiliary material that has the property of increasing the effect of the active ingredient even though it may have little specific activity itself.

NOTE: In the case of insecticides, synergists are considered as active ingredients.

Valve—mechanism for discharging products from aerosol-type dispensers.

Viscosity—internal resistance to flow of a solid (powder), liquid or gas at a specified temperature. A definite measurement for the consistency of a material.

Volatile Ingredients—components of an aerosol formulation with a vapor pressure greater than atmospheric pressure (>14.7 lbs. per sq. in. absolute) at a temperature of 105°F. Sometimes called *high volatile* components.

Suggested Additional Terms

Code—

Combustible—
 Filling Head—
 Hot Tank—
 Pressure Fill—
 Ratio—Active to Inactive Ingredients—
 Refrigeration Fill—
 Safe Fill—
 Spray Pattern—
 Spray Rate—
 Valve Button—
 Valve Cup—(Valve Mounting Cap)—
 Valve Overcap—(Valve Cover Cap)—

Canco Exhibit

Dripless cans for dishwashing and home laundry detergents were featured in the exhibit of American Can Co. at the American Home Economics Convention at Washington, D. C., June 26-29. Pressure cans for a wide range of aerosol products were shown.

Snap-On Top For Aerosols

An aluminum snap-on screw top for aerosol cans was introduced last month by Builder's Sheet Metal Works, Inc., 108 Wooster Street, New York 12. Adaptable to cold and pressure filling, the device may be of interest to anyone needing a refillable aerosol container. This may include testers of products and propellants, and anyone investigating the effects of pressure packaged formulations on the can and valve. The manufacturer suggests use by companies who package their own products and by do-it-yourself users of aerosol paint and other specialties. The entire assembly, including a six ounce spray can, a one pound can of "Freon," a hoke toggle valve and filling head and other parts, costs \$22.05.



Bingham a Director

C. F. Bingham, vice-president in charge of sales for Columbia-Southern Chemical Corp., Pittsburgh, a wholly owned subsidiary of Pittsburgh Plate Glass Co., has been elected a director, it was announced late last month by E. T. Asplundh, president. Mr. Bingham, prior to his election as vice-president, had served as director of sales for Columbia-Southern. He joined the firm as a technical service engineer and during his 16 years with the company has held various sales supervisory positions. He is a graduate of Virginia Polytechnic Institute with a B.S. degree in chemical engineering.

Two other directors elected by Columbia-Southern, the number of board members of which has been increased from 11 to 14, include W. E. Phillips and H. B. Brown.

Mr. Phillips has served as a director of Pittsburgh Plate Glass Co. since 1950 and is board chairman and chief executive officer of Canadian Pittsburgh Industries, Ltd., a wholly-owned subsidiary of Pittsburgh Plate.

Mr. Brown has been a director of Pittsburgh Plate Glass Co. since 1944 and secretary of the firm since 1939.

New Tube Manifold Plant

Tube Manifold Corp., North Tonawanda, N. Y., recently announced the opening of a new plant covering 82,000 square feet of manufacturing space and featuring latest production equipment on a one-floor layout.

Disposable and refillable containers for pressure packaging are included in the wide range of tubular products made by the firm.

Cont'l Can, Gair Merger

A proposal for the merger of Continental Can Co. and Robert Gair Inc., both of New York, was announced June 28 by Gen. Lucius D. Clay, chairman of Continental, and George E. Dyke, chairman of Gair. The directors of Continental and the executive committee of Gair

have approved the merger and will recommend it to their stockholders.

The proposal calls for an exchange of common stock at the ratio of eight tenths of a share of Continental for each share of Gair. Holders of Robert Gair convertible preferred would receive shares of a new convertible preferred issue of Continental share for share. Each share of the new issue would be convertible into 2.4 shares of Continental common stock.

Solvay Appoints Two

John C. MacLeod has been named assistant director of operations and Bennett D. Buckles, assistant to the vice-president, it was announced recently by Solvay Process Division, Allied Chemical & Dye Corp., New York. Mr. MacLeod's appointment becomes effective August 1. He has served as manager of the firm's Syracuse plant since 1953, a post which will be filled by Clyde A. Kitto, currently manager of the Baton Rouge plant. Mr. MacLeod has been with Solvay Process for 31 years. He will continue to be located in Syracuse.

Mr. Buckles will start in his new post on July 1. Since joining Solvay in 1946 he has served as technical assistant, general foreman, and soda ash supervisor. He will be located in New York.

Milner Advances Dawson

Milner Products Co., Jackson, Miss., manufacturer of "Pine-Sol," a cleanser-disinfectant-deodorant, has advanced Charles M. Dawson to the newly-created position of regional sales manager, it was announced recently by Howard S. Cohoon, president. The new regional sales manager will be in charge of sales and supervision in 24 states, accounting for 47 brokers and four district sales managers.

Mr. Dawson first joined Milner in 1949 and had served as divisional sales manager in charge of 17 north and mid-western states. He will continue to make Chicago his headquarters.

AMA Studies Poisonings

Urges intensified education program to alert parents to hazards children face from household chemical products

By H. H. Slawson

AN intensified educational program to alert parents to the hazards children face from household insecticides was called for at the American Medical Association's 105th annual meeting in Chicago, June 11-15.

Labeling programs, actively developed over the years by national organizations, can be ineffective, Dr. John H. Foulger, Wilmington, Del., declared, if unaccompanied by an intensified program of parental education. Dr. Foulger spoke at a session of AMA's section on childhood diseases. His paper, "The Manufacturer Looks at Childhood Poisoning," was one of several convention features designed to acquaint physicians with the hazards of the newer insecticides, and present the newest methods for treating cases encountered now by the doctors.

Most tools of modern life, Dr. Foulger observed, can injure, if not used with proper information or due care. Chemicals, he declared, are tools.

The manufacturer, he said, can supply information for safe use but he cannot control the degree of care exercised by the user. Reduction in the number of childhood poisonings cannot follow the efforts of the manufacturer alone, he insisted.

"Parents must realize," said Dr. Foulger, "that the same vigilance they use to keep matches, sharp edged tools or loaded firearms out of the reach of their young children, must be used to keep medicaments or household chemicals away from them".

Pesticides cause 10 percent of accidental injuries by packaged

chemicals, a Chicago physician, Dr. Bernard Conley, stated at the same session of the pediatrics section. Most, if not all of these accidents could be prevented, he asserted, "if those sirens of disaster—ignorance and carelessness—could be thwarted."

Continuing, Dr. Conley described a long list of typical accident cases, including the following: "ingestion of phosphorus-containing gopher paste; ingestion of insecticide vaporizer tablets by toddlers; drinking of rodenticide solutions by crawling infants; use of horticultural insecticide bomb to spray room containing sleeping children; splashing of garden spray containing organic phosphorus insecticide on playmate; and group poisoning following eating of garden greens heavily contaminated with insecticide."

Danger points in and around the home were described by Dr. Conley and he explained preventive measures for various accidents. Safety with chemicals, the Chicago medic declared, "is a product of education and discipline and the former is not very effective without large doses of the latter."

Petroleum products, drugs and materials for external use constitute 94 percent of all poisons, Dr. Jay M. Arena, Durham, N. C., stated in a paper in which he outlined the latest treatments for practical management of common poisons.

In a paper on "The Public Health Aspects of Poisoning," Dr. Edward Press, New York, outlined the role of poison control centers which combine the efforts of physicians, hospitals, health departments,

pharmacists, veterinarians and others in a coordinated attempt to improve treatment of poisoning and intensify preventive efforts.

This program, Dr. Press pointed out, is urgent, not only because of industrial and scientific developments in the field of chemistry, but also because of "modern marketing practices," which, he said, have greatly intensified the number and type of potentially poisonous substances in our environment. He gave special attention to the impact of this on infants and children, where, as he pointed out, the possibilities for accidental misuse are considerably greater than with adults.

"How Toxic Is It?," a subject of intimate interest to the physician confronted with a poisoning case, was discussed by Dr. Robert E. Gosselin, Rochester, N. Y., who explained that the "toxicity rating" of any substance (or mixture) is one convenient index to acute oral toxicity.

For most commercial products the mean or probable lethal dose can be estimated, Dr. Gosselin said, if the ingredients and percentage composition are known. From a list of commercial products commonly found in homes and on farms he selected representative types that fall within each toxicity class. These data he used to illustrate the merits and limitations of toxicity ratings as prognostic guides for the physician in cases of acute chemical poisoning.

Among strictly scientific exhibits designed by AMA's Council on Scientific Assembly to acquaint doctors with recent developments in several score of medical fields, was one prepared by American Cyanamid Co.'s central medical division, which dealt with "Phosphate Ester Insecticide Poisoning."

This exhibit demonstrated the hazards involved in use of parathion, malathion and American Cyanamid's new "Thimet" systemic insecticide, now being used experimentally on cotton and tobacco.

Using wall charts, graphs and pictures, the nature of each chemical and its action were ex-

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Petronauba C	180 Min.	7 Max.	3 Max.	22-28	50-60
Petronauba D	185 Min.	5 Max.	6 Max.	20-28	50-60
Petronauba F	180 Min.	5 Max.	3 Max.	15-25	50-60
Petrolite C-15	180 Min.	4-6	4-5	15-17	45-55
Petrolite C-23	180 Min.	4-6	4-5	20-25	55-65
Petrolite C-36	180 Min.	5-7	4-6	30-35	75-85
Petrolite PE 100	195-200	2-3	4-6	15-20	45-55
Petrolite R 50*	190-200	2 Max.	4½ Max.	40-50	65-80
Petrolite P 20	210-220	2 Max.	3 Max.	Nil	Nil
Petrolite P 25	210-220	2 Max.	3 Max.	Nil	Nil

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plained, the symptoms of poisoning described, along with tests to be used in making a diagnosis and the treatment to be followed by the physician. Methods by which the hazards may be avoided were also shown.

The severity of the poisoning, it was explained, can be determined by the blood cholinesterase test, which reveals the extent of destruction of this enzyme in the blood resulting from the poison.

Shown and demonstrated to doctors visiting the display was a kit with color chart for making this cholinesterase test at moderate cost. Manufactured by a Roselle, N. J., firm (Ed-Biological Test Products Corp., 1112 Thompson Ave., Roselle, N. J.) this kit has been recently placed on the market for use by rural doctors and operators of aerial spray services.

Credit for preparation of this exhibit was given to American Cyanamid's medical director, Dr. D. O. Hamblin, associate director, Dr. Harold H. Gelz, and C. Boyd Shaffer, chief toxicologist.

Soaps and detergents came in for attention by the doctors in the meetings of AMA's dermatology section. Here Dr. Raymond R. Suskind, Cincinnati physician and staff member of the Univ. of Cincinnati College of Medicine, asserted that these products, used for personal hygiene and for household and industrial cleaning, "undoubtedly result in many health and cosmetic benefits." Among "salutary effects on normal skin" which he discussed in his paper on "Cutaneous Effects of Soaps and Synthetic Detergents," he mentioned "removal of cutaneous secretions, cellular debris, pathogenic micro-organism, air pollutants and potentially hazardous contactants deposited on the skin in a variety of activities."

They are also employed effectively, Dr. Suskind said, as a preventive and/or therapeutic agent in certain specific dermatoses. For dermatoses in which certain cleansing agents are not tolerated, he added, appropriate substitutes may be pre-

scribed by the physician.

"Under a large variety of complex circumstances, operating simultaneously in the modern household," Dr. Suskind said, "use of soap and synthetic detergents may give rise to cutaneous alterations in susceptible individuals. The most common clinical problems are the so-called winter eczema and housewife's eczema. It has been demonstrated that these materials rarely act as sensitizing agents." Continuing, he reported on studies designed to establish the nature of cutaneous reactions attributed to soaps and syndets and the factors that influence them.

A Harvard University researcher, Irvin H. Blank Ph.D., said in a discussion of "The Rational Use of Cosmetics in Medical Practice," that emollient creams are used on the skin to counteract the sensation of dryness that may occur after contact with household cleaners or exposure to cold or as a result of aging. Additives, such as vitamin A and estrogens, are sometimes used in these creams, but he stated that he "knows of no adequate evidence that creams with these additives are more effective than the vehicle alone."

Pressure Packaging

(From Page 106)

Pak in Baltimore to work with Pennsylvania Salt Manufacturing Company.

DU PONT do Brasil, S.A.—Indústrias Químicas, wholly owned subsidiary of the U.S. firm of E. I. du Pont de Nemours & Co. (Inc.), recently announced it's building a plant for manufacture of "Freon" refrigerants and aerosol propellants near Barra Mansa in the state of Rio de Janeiro . . . cost and production capacity not disclosed but said to be designed to exceed Brazil's requirements for the next five years, and ready to turn out "Freon" compounds in early 1957.

Rumors are prevalent, too,

that Du Pont's Argentinian subsidiary — Ducilo, Limited — will build its own plant for manufacture of "Freon" compounds in that South American country.

All of this led us to inquire into the state of the aerosol loading business "south of the border." Aerosol loading plants are now in operation, we find, in Mexico, Cuba, Venezuela, Brazil, Peru, and Uruguay. As might be expected, insecticides have been the opening wedge in all areas. Production, extremely small in comparison with that in the U.S., is just feeling its way along, but the potential looks good.

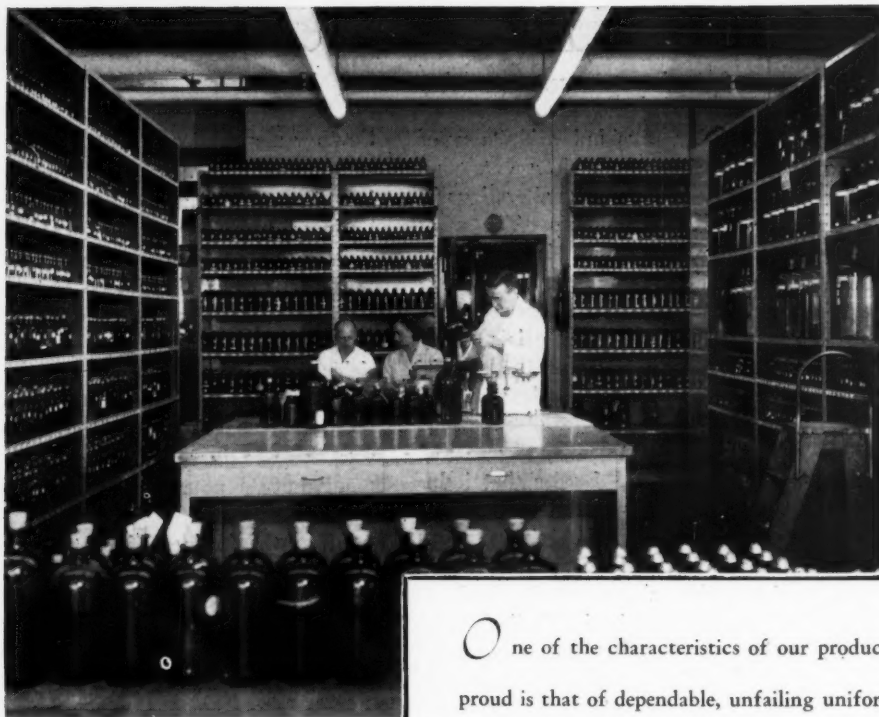
Elsewhere, South Africa has been in the business for at least a year, with several loaders operating there. Israel also has loading facilities . . . familiar U.S. customer name there is Helene Curtis Industries.

AN aerosol container is considered to have a safe-fill if there is present $7\frac{1}{2}$ per cent headspace within the container when the contents are heated to 130° F.

That's the gist of the long-awaited report of the Safe Fill Sub Committee of the Aerosol Division's Scientific Committee, as approved by the CSMA Board of Governors last May 22. Setting up an unofficial standard, the report may be inspected at the CSMA executive office . . . copies will not be available for mailing.

THE first official glossary of terms used in the aerosol industry, bearing tentative approval of the CSMA, has been published as association Bulletin 105-56, dated June 21, 1956. Worked up by a committee headed by Dr. Ralph C. Downing of Du Pont's Kinetic Chemicals Division, it will become official when CSMA's Board of Governors ratifies the approval of the Aerosol Administrative Committee of last May 20. Board action probably will come at the next regular meeting in September at Oyster Harbors.

(Turn to Page 175)



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Methylene Chloride

(From Page 124)

ride, propellants containing this compound are tremendously better solvents for many materials than systems composed entirely of fluorinated hydrocarbons. This is of particular importance to insecticide products in which it is necessary to obtain a completely homogeneous solution of ingredients for maximum effectiveness. The solubility of DDT and methoxychlor in the various propellant materials is shown in Table II. This data points up the superior solvent power of methylene chloride toward these insecticides. This solvent power is imparted to all propellants which contain methylene chloride.

Hydrolysis

THE hydrolysis rates of methylene chloride and the various fluorinated methanes and ethanes, determined in the presence of steel at 122°F, are summarized in Table III.

Practice has shown that Type 11 hydrolyzes rapidly enough to be undesirable for use with aqueous based aerosol products. Since methylene chloride has a hydrolysis rate greater than that of Type 11.

Table III. Hydrolysis Rate in Water*

Compounds	Grams/ Liter/ Year
CH ₂ Cl ₂ (methylene chloride)	55
CFCl ₃ (Type 11 fluorinated hydrocarbon)	28
CF ₂ Cl ₂ (Type 12 fluorinated hydrocarbon)	10
CF ₂ Cl-CF ₂ Cl (Genetron 320 or Freon 114)	3

it is also undesirable for use with aqueous systems.

Effect on Finishes

ALTHOUGH methylene chloride is a good solvent for resins and is capable of lifting paint films, aerosol sprays containing methylene chloride are not particularly damaging to synthetic fabrics, plastic articles and surface coatings. Twelve commercial synthetic fabrics were exposed in the laboratory to 3 different aerosol products in which the propellant consisted of a 50/50 mixture of methylene chloride and Type 12. The first product consisted entirely of propellant. The second product was a room deodorant consisting of 7.5% di-

*Kinetic Technical Bulletin B-2, 1952, Kinetic Chemicals Division, E. I. du Pont de Nemours & Co.

propylene glycol, 0.5% perfume oil and 92% propellant. The third product was an insecticide composed of 15% active ingredients and 85% propellant.

Table IV presents the results of experiments in which a swatch of synthetic fabric was exposed to a particular aerosol spray for 5 seconds at can-to-fabric distances of 6 and 12 inches. This amount of spray is sufficient to wet (soak) the fabric completely. The data indicate that only one of the fabrics, cellulose acetate, shows any sensitivity to these aerosol sprays. However, when the can is kept at a distance of 12 inches from the sprayed surface even cellulose acetate remains unaffected.

Molded and calendered vinyl type plastics are not quite as resistant to methylene chloride sprays as are the various fabrics. Table V lists the results of similar experiments with a number of molded articles and plasticized sheets of vinyl type plastics. Damage incurred was evidenced by shrinkage and/or distortion (wrinkling) of the material. Extent of damage is expressed by four terms: very slight, slight, moderate and extensive. This work shows that curtains, table cloths, aprons, floor tile,

Table IV. Effect of Methylene Chloride Aerosols on Synthetic Fabrics

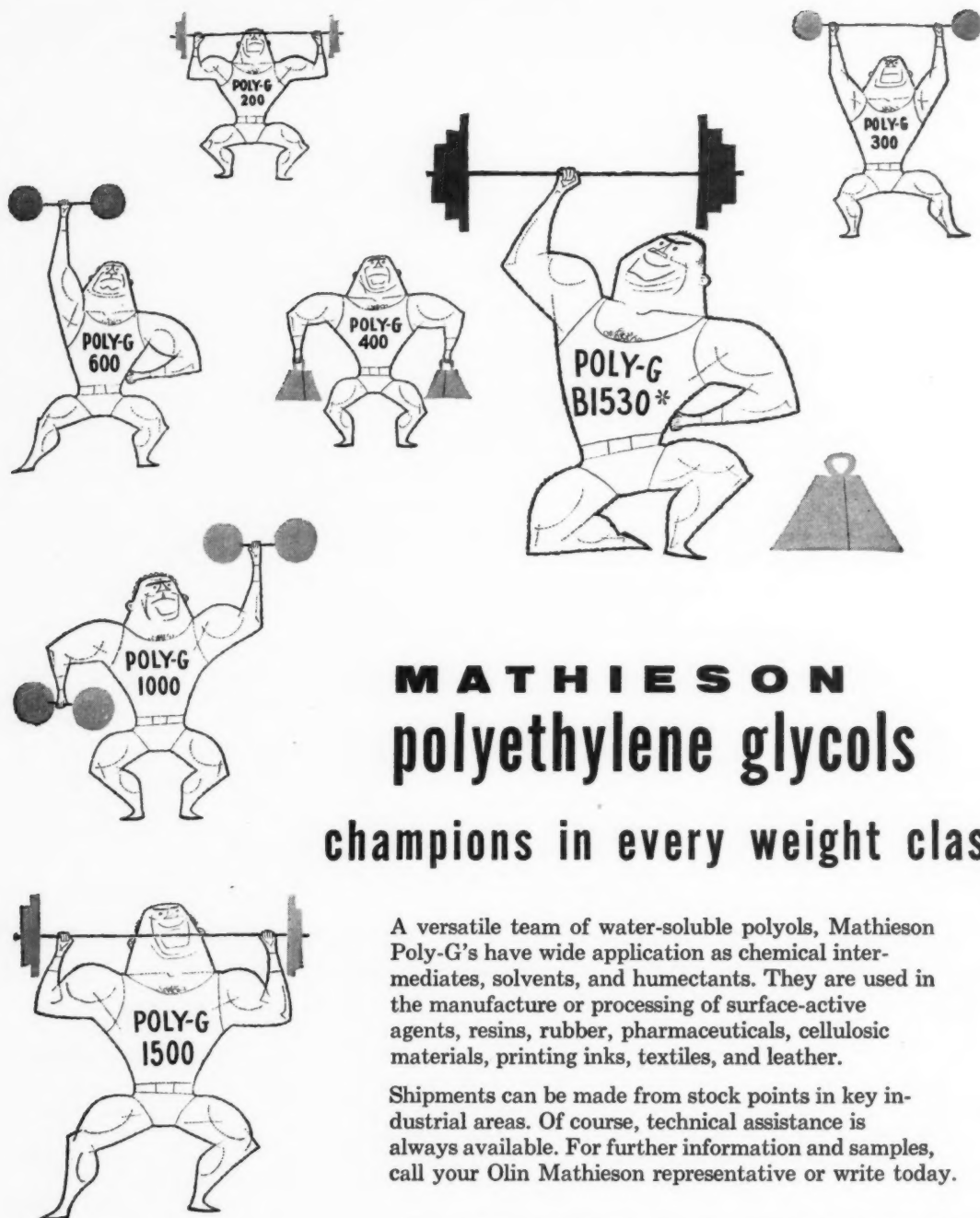
Fabric ⁽¹⁾	Spraying Conditions		Effect of Spray on the Fabric		
	Distance between can and fabric in inches	Duration of spray in seconds	Propellant only ⁽²⁾	Room Deodorant ⁽³⁾	Insecticide ⁽⁴⁾
Acetate (Celanese)	6	5	Shrinkage and distortion	None	None
	12	5	None	None	None
Acrylan	6	5	None	None	None
Dacron	6	5	None	None	None
Dynel	6	5	None	None	None
Fortisan	6	5	None	None	None
Nylon (duPont)	6	5	None	None	None
Orlon	6	5	None	None	None
Rayon (duPont)	6	5	None	None	None
Saran	6	5	None	None	None
Vicara	6	5	None	None	None

(1) Acetate, Acrylan, Dynel, Fortisan, and Vicara fabrics were obtained directly from the respective fiber manufacturers. Dacron, Nylon, Orlon and Rayon fabrics were obtained from Testfabrics, Inc., New York City. Saran fabric was obtained from the National Filter Media Co., New Haven, Conn. All fabrics were certified to be pure materials and not blends of two or more fibers.

(2) This product consisted of 50% methylene chloride and 50% TYPE 12.

(3) This deodorant consisted of 7.5% dipropylene glycol, 0.5% perfume oil, 46% methylene chloride and 46% TYPE 12.

(4) This insecticide was composed of 15% active ingredients (McLaughlin Gormley King Co., Pyroicide Aerosol Mix #1019), 45.5% methylene chloride and 42.5% TYPE 12.



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Table V. Effect of Methylene Chloride Aerosols on Vinyl Type Sheets and Molded Products.

Material	Spraying Conditions		Damage ⁽¹⁾ Caused by Spray		
	Distance between can and fabric in inches	Duration of spray in seconds	Propellant only ⁽²⁾	Room Deodorant ⁽³⁾	Insecticide ⁽⁴⁾
Curtain #1*	6	5	Extensive	Slight	Slight
	12	5	None	Very Slight	Very Slight
Curtain #2*	6	5	Extensive	Extensive	Very Slight
	12	5	None	None	None
Curtain #3*	6	5	Extensive	Slight	Moderate
	12	5	None	None	None
Apron*	6	5	Moderate	Very Slight	Slight
	12	5	None	None	None
Rain Coat*	6	5	Moderate	Very Slight	Very Slight
	12	5	None	None	None
Baby Pants*	6	5	Extensive	Slight	Slight
	12	5	None	None	None
Plastic Toy, Molded Polystyrene	6	5	Extensive	Extensive	Extensive
	12	5	Slight	None	Slight

* Composition unknown. Believed to be plasticized vinyl co-polymer.

(1) In the case of sheet material the only damage noted was wrinkling.

(2) (3) (4) Composition of these products is described in footnotes to Table IV.

etc. made of plasticized vinyl type materials are somewhat susceptible to methylene chloride sprays at can-to-surface distances of less than 12 inches. However, as long as the aerosol products are used at a distance of more than 12 inches from the surface there appears to be little chance of damaging the plastic material.

The effect of methylene chloride aerosols on paints varies considerably with the nature of the surface coating and the aerosol product. Most of the paints employed in this investigation were paints which we know to be easily removed with methylene chloride paint removers. The data in Table VI illustrate that some coatings are damaged by these sprays at a can-to-surface distance of six inches but none appear to be appreciably affected at a distance of twelve inches.

Materials which are susceptible to attack by methylene chloride aerosols are affected by these sprays only if the aerosol can is held close to the surface of the material. At a can-to-surface distance of 12 inches none of the materials tested suffered any appreciable damage. To obtain a satisfactory spray with most aerosol products it is necessary to hold the can at a distance of 15 to 24 inches from

the sprayed surface. Under these conditions the methylene chloride in the aerosol product appears to be harmless to synthetic fabrics, plastic articles and surface coatings. To avoid possible unfortunate incidents it may be desirable to label certain types of aerosol products containing methylene chloride to the effect that the can should be held at a distance of 2 feet from the object sprayed. We refer here to products such as room deodorants, insecticides, moth proofers, and artificial snow.

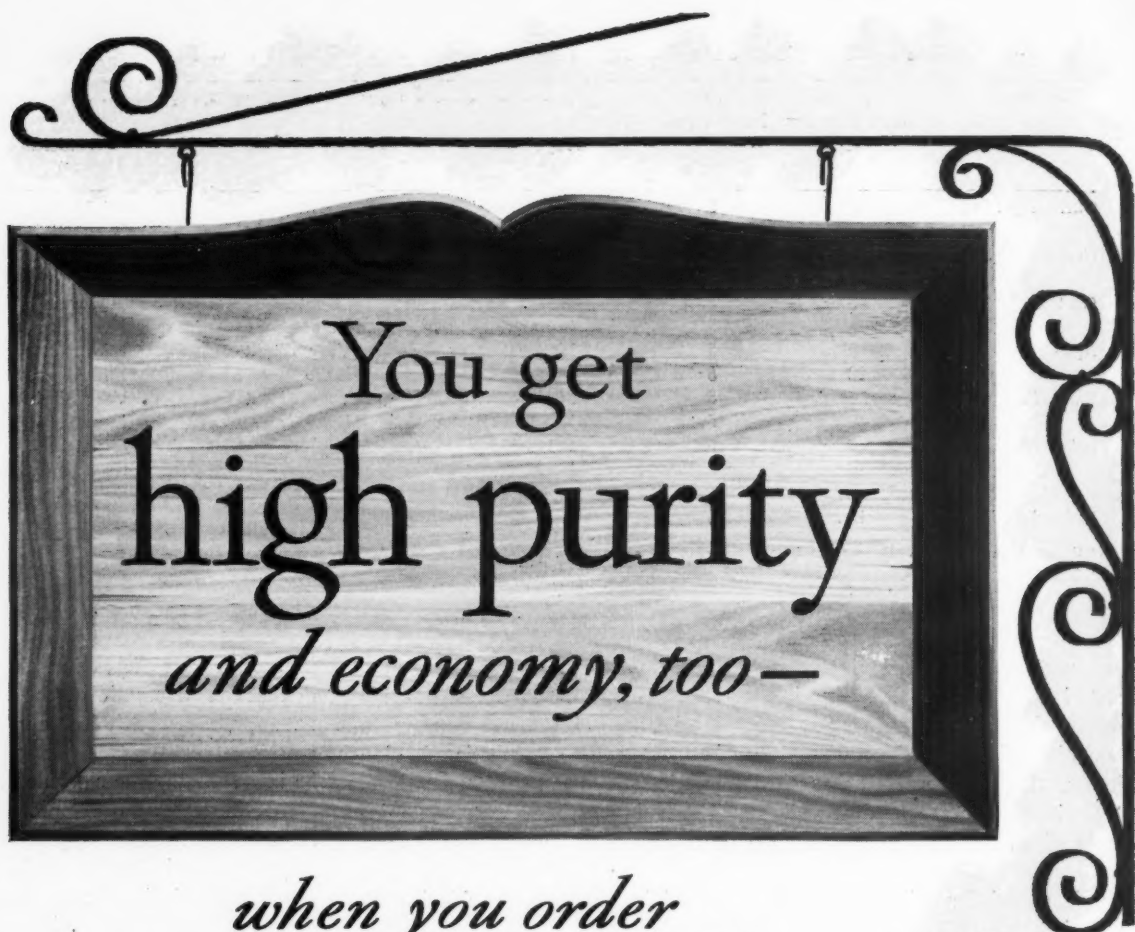
Inertness Toward Active Ingredients

METHYLENE chloride (dichloromethane) is a polyhalogenated methane just as are Type 11 (trichloromonofluoromethane) and Type 12 (dichlorodifluoromethane). It undergoes the same reactions as the Type 11 and Type 12. Its rate of reaction, in practically all reactions, is slightly greater than that of Type 11 whose rate in turn is slightly greater than that of Type 12. In general, if the fluorinated propellants are inert to a particular set of active ingredients methylene chloride will also be inert to them. The exception arises in cases where the fluorinated propellants are not really inert to

the active ingredients but the rate of reaction of certain of the fluorinated propellants with these ingredients is so slow that they appear to be inert. Methylene chloride, which generally reacts more rapidly than most of the fluorinated propellants, may not be suitable for use in such cases. Hydrolysis by aqueous solutions is an example of such an instance. Type 12 can be used with aqueous base aerosols but Type 11 and methylene chloride cannot be used with such products because they hydrolyze too rapidly.

Stability Toward Packaging

THE aerosol package consists of a can and a valve. The can interiors are either black iron or tin plate and are usually lacquered. This lacquer lining is attacked to some extent by methylene chloride. However, the amount of lacquer picked up by the formulation is so small that it does not affect the properties of the aerosol spray; white artificial snow products show no discoloration whatsoever. The removal of this protective organic lining does not appear to promote any container attack. We have never encountered any container attack that could be ascribed to the use of methylene chloride; aerosol cans appear to be quite inert to methy-



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Table VI. Effect of Methylene Chloride Aerosols on Surface Coatings

Coating	Spraying Conditions		Damage Caused by Spray			
	Distance between-can and surface in inches	Duration of spray in seconds	Propellant only ⁽²⁾	Room Deodorant ⁽³⁾	Insecticide ⁽⁴⁾	Artificial Snow ⁽⁵⁾
Black Enamel	6	5	Extensive	Slight	Moderate	Slight
(Benjamin Moore & Co.)	12	5	None	None	None	None
White Enamel	6	5	Extensive	None	None	Moderate
designed to meet Federal specification						
TT-E-489B	12	5	None	—	—	None
Brown Primer	6	5	Moderate	None	None	Moderate
designed to meet Federal Spec. TT-P-363B	12	5	None	—	—	Slight
Alkyd Primer	6	5	Extensive	Moderate	Slight	Moderate
(Devco and Reynolds Co., Ready-Mixed Red Lead No. 20)	12	5	Slight	None	None	None
Soya Alkyd	6	5	Extensive	Moderate	Moderate	Extensive
(E. I. duPont de Nemours & Co., Dulux Super White Gloss Enamel)	12	5	None	Very Sl.	None	None
Water Based	6	5	Extensive	Extensive	Extensive	Moderate
Polyvinyl Acetate (Pittsburgh Plate Glass Co. Snolite Quick Drying Wall Sealer, Emulsion type-white)	12	5	None	Very Sl.	None	None
Nitrocellulose Lacquer (United Chromium Corp.)	6	5	None	Very Sl.	None	None
Unichrome A-112 Clear)	12	5	—	None	—	—
Cellulose						
Acetate-Butyrate Lacquer (United Chromium Corp. R-138 Clear)	6	5	None	None	None	None
Chlorinated Rubber	6	5	None	None	None	Moderate
Truscon Labs., Paratex Chlorinated Rubber Base						
Floor Coating—White	12	5	—	—	—	None
Phenolic Air Dried (United Chromium Corp.)	6	5	Slight	Slight	None	None
Unichrome A-143-3 Gray)	12	5	None	None	—	—
Shellac (Wm. Zinsser Co., Bull's Eye)	6	5	Very Sl.	Very Sl.	Very Sl.	Moderate
	12	5	None	None	None	Slight

(1) Wrinkling of the surface film was used as a measure of damage.

(2) (3) (4) Composition of these products is described in footnotes to Table IV.

(5) Artificial Snow consists of 13% stearic acid, 7% Rohm & Haas A cryloid B-72, 30% methylene chloride, 10% TYPE 11, and 40% TYPE 12.

lene chloride propellants.

The valves, on the other hand, contain some elastomers which are susceptible to attack by methylene chloride. Dilute solutions of methylene chloride in various aerosol systems, however, are not as powerful solvents as pure methylene chloride and are usually tolerated by aerosol valves. The concentration of methylene chloride which may be tolerated by a valve is dependent on both the nature of the valve and the nature of the

other ingredients in the product. For purpose of discussion we shall term this maximum tolerable concentration as the critical methylene chloride concentration. This concentration is based on total product composition. Aerosol products which contain methylene chloride in concentrations below this critical value are not corrosive to aerosol valves. As mentioned above, this critical concentration is not a rigidly set figure; it must be determined empirically for each product and valve

combination.

In the case of some aerosol products the amount of methylene chloride introduced into the product by use of a 50/50 methylene chloride-Type 12 propellant is in excess of the critical value for that product. In such cases ternary systems consisting of 50% Type 12 and complementary quantities of methylene chloride and Type 11 must be used. The methylene chloride to Type 11 ratio in these ternary propellants is



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so fixed that the critical methylene chloride concentration for the product is not exceeded. In this way some methylene chloride may be used in practically all household aerosol products.

In many cases aerosol valves exposed to formulations containing high concentrations of powerful elastomer solvents, such as methylene chloride, do not fail to function but merely allow the propellant to escape slowly from the can. Hence valves are evaluated by measuring the weight loss in aerosol products packaged with these valves. Standard or acceptable losses are considered to be 5 grams per year for products stored at room temperature (the so-called shelf life test) and one gram per month for products stored at 130°F. (the accelerated aging test).

Correspondence with the major valve manufacturers has indicated that these firms have accounts which use their valves in packaging aerosol insecticide formulations containing 22.25%* methylene chloride. None of these firms indicate that higher concentrations of methylene chloride cannot be used with their valves. One valve company has tested its valves with a product containing 42.5% methylene chloride. The exact formulation was not disclosed. This company's shelf life tests showed an average weight loss of 5 grams over a period of 11 months.

The company's accelerated aging tests showed an average weight loss of approximately one gram per month at 130°F. Another company states that its valves have been used with artificial snow formulations containing 40% methylene chloride.

It appears that methylene chloride may be employed in aerosol formulations to the extent of 30 to 40 percent. The exact concentration will depend on the nature of the other ingredients in the formulation. In practice it will be necessary to evaluate the effect of each formulation on the valve with which

it is to be packaged. Most valve manufacturers, however, appear to have valves that are unquestionably able to tolerate at least 22.25% methylene chloride in an insecticide formulation. This corresponds to propellant compositions of 50% Type 12, 25 to 30% methylene chloride and 20 to 25% Type 11; the exact composition is dependent on the ratio of insecticide concentrate to propellant.

It has recently been found that many slow leaks in aerosols are not due to valve failure but to a poor valve to can seal which is made by a crimping operation. It is necessary to effect a tighter crimp in containers employing methylene chloride than in those employing the fluorinated propellants only.

Economics

PROPELLANTS containing methylene chloride are considerably cheaper than those composed entirely of fluorinated hydrocarbons. The cost of methylene chloride is about 50% of that of Type 11. Substitution of even small quantities of Type 11 by methylene chloride will afford a definite saving in propellant cost. Considered in terms of the thousands of aerosol cans put up daily by a firm this saving can be quite appreciable.

A further economic advantage is gained through the fact that methylene chloride is a poorer vapor pressure depressant than Type 11. Methylene chloride-Type 12 systems contain less Type 12 than an 11-12 system of equal vapor pressure. As mentioned previously, the system 52% methylene chloride-48% Type 12 has the same vapor pressure as the 50/50 11-12 system. Since Type 12 is a slightly costlier ingredient than Type 11 this conservation of Type 12 is significant.

Summary

THE 50/50 methylene chloride-Type 12 system is a satisfactory general purpose, low pressure aerosol propellant. Its propellant properties are equal to those of the

50/50 11-12 mixture. The methylene chloride-Type 12 system has the advantage of being substantially cheaper than the 11-12 mixture and of being a better solvent for most organic materials than the latter. There is one limitation on the use of this system; some aerosol valves are unable to withstand high concentrations of methylene chloride when it is used in conjunction with other powerful solvents required in certain formulations. In such case the ternary systems consisting of 50% Type 12 and complementary quantities of methylene chloride and Type 11 can be used successfully. The solvent power of these systems can be varied by adjusting the methylene chloride to Type 11 ratio. A system compatible with any aerosol valve can be obtained in this manner. Even the small quantities of methylene chloride used in some of these mixtures will allow appreciable saving.

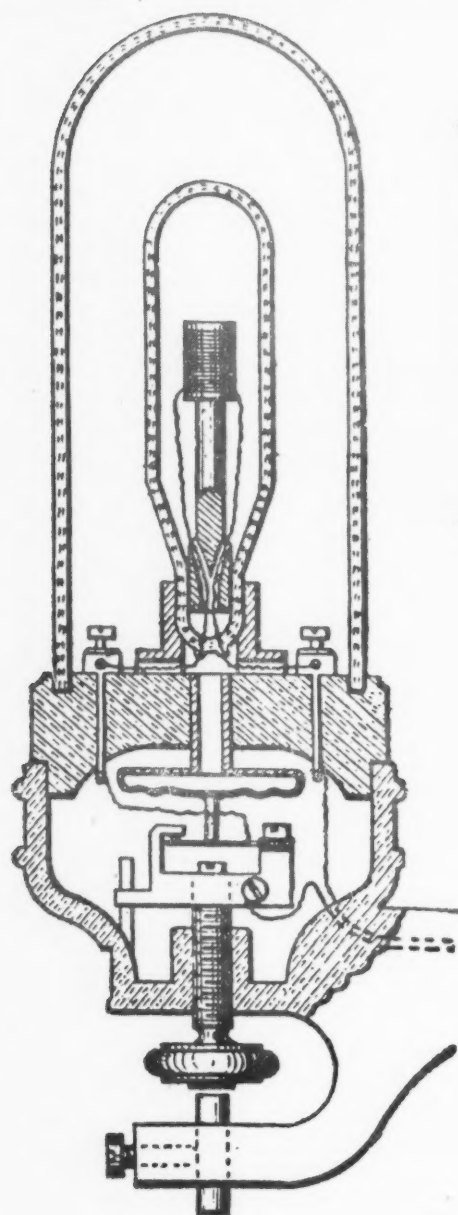
Methylene chloride is currently used to some extent in practically all types of household aerosol products. Use in insecticide products is particularly widespread. In our own laboratory we have successfully employed methylene chloride in packaging room deodorants, artificial snow, paints and lacquers, acrylic coatings, adhesives, ink products, lubricating oil, garbage can spray, oven cleaners, photograph coatings, paint removers, and even dry powder products such as talc. With few exceptions, methylene chloride can be used in almost any type of non-aqueous base aerosol.

The present discussion has been essentially limited to those propellant systems which have a vapor pressure of approximately 40 psig at 70°F, because this is the most common type used. However, it is obvious that one can prepare binary and ternary methylene chloride-fluorinated hydrocarbon mixtures which will exert vapor pressures other than 40 psig. These mixtures are also good propellants and some are in commercial use

(Concluded on Page 177)

*Percent based on total product composition.

Important dates in the History of Industrial Progress



1879



In electricity...

Thomas A. Edison, possibly America's greatest inventor, closed a switch and opened an era. The incandescent lamp remains one of the most significant discoveries of all time.

In the history of fats and waxes

Koettstorfer described the saponification value of fats and oils. In conjunction with acid (neutralization) value, saponification value is a guide to the amount of esters present in a fatty acid.

All GROCO fatty acids, whether of vegetable or animal origin, are wholly free of undesirable esters because no solvents are used in their production. Exceptional uniformity, color and stability are other qualities industry has learned to associate with the Gross trademark.

Here is a list of vegetable fatty acids made by A. Gross & Company. If these important materials figure in your product, send for samples and catalog, "Fatty Acids in Modern Industry".

GROCO VEGETABLE FATTY ACIDS

- GROCO 24 — Regular Coconut Fatty Acids
- GROCO 26 — Stripped Coconut Fatty Acids
- GROCO 27 — Regular Soya Bean Fatty Acids
- GROCO 28 — Alkyd Grade Soya Bean Fatty Acids
- GROCO 29 — Corn Fatty Acids
- GROCO 30 — Regular Cottonseed Fatty Acids
- GROCO 35 — D.D. Cottonseed Fatty Acids
- GROCO 45 — Palm Oil Fatty Acids
- GROCO 46 — D.D. Palm Oil Fatty Acids

A. GROSS & COMPANY

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Distributors In Principal Cities

Manufacturers Since 1837

News

New Harrison Executives

The appointment of two new officers of A. S. Harrison Co., South Norwalk, Conn., was an-



C. E. Palmer

nounced in mid-June by Allrich S. Harrison, president. Harrison makes "Preen" floor wax and other packaged household products.

Charles E. Palmer has been named vice-president in charge of marketing and Alfred L. Olsen is the new secretary of the firm.

Mr. Palmer had been associated with Lever Brothers Co., New York, from 1952 until joining Harrison. With Lever he had been product manager, handling "Lux" flakes and "Lux" liquid detergent. Previously, he had been associated with the management of "Breeze" and "Surf" detergents and "Life-buoy" soap and other Lever products. Prior to that he was advertising and sales promotion manager of Norex Division of Schenley Industries, New York, handling drug products for that firm. Mr. Palmer served with the Army Air Corps from 1941 to 1945, and is a graduate of Yale University, class of 1945.

The new secretary of the company, Alfred L. Olsen, succeeds G. Gardner Pitts, who retires July 31, because of poor health. Mr. Pitts plans to live in Florida. Mr. Olsen has been associated with

the sales department of A. S. Harrison Co. since joining the firm in 1946, shortly after the formation of the company. He has been active



A. L. Olsen

in all phases of its sales work. Mr. Olsen, in addition to his duties as secretary will continue in his current capacity as sales manager in charge of field operations.

New Aerosol Lacquer Firm

Formation of Easy-Way Products Corp., Cleveland, was announced recently. The new firm will introduce a line of 16.4 ounce aerosol containers of spray enamels and lacquers.

New MGK Repellent

The first and only fly and mosquito repellent chemical accepted and registered for use in cattle and barn sprays by the Food and Drug Administration and the U. S. Dept. of Agriculture since the Pesticide Residue Amendment (frequently called the Miller Bill which went into effect in July, 1954) is now being offered by McLaughlin Gormley King Co., Minneapolis, as "MGK Repellent 11."

The new chemical was developed by Phillips Petroleum Co., Bartlesville, Okla. MGK is operating under a license in the marketing of this new repellent.

Use of "MGK Repellent 11"

in cattle and barn sprays is designed to eliminate reduced milk production and cattle weight losses which occur during the fly and mosquito season. Sprays, when properly formulated and applied, need only be applied every third day to be effective, according to MGK.

Kupris in New Post

R. M. Hollingshead Corp., Camden, N. J., announced last month the advancement of Anthony C. Kupris to the newly created post of merchandising and market development manager. He has served Hollingshead as general advertising manager since 1954. In his new post the following departments will come under his management responsibilities: market development, market research, technical service, consumer products, and advertising. Prior to joining Hollingshead, Mr. Kupris had been associated with Standard Oil Co. of Indiana since 1946.

Sveda a Consultant

Dr. Michael Sveda, who was with the Grasselli chemicals department of E. I. du Pont de Nemours & Co., Wilmington, from 1939 until his resignation earlier this year, recently announced the establishment of his own chemical market research service. This consulting service centers around sales development of new chemical products, both inorganic and organic. Primarily, he will give assistance on how to bring all available facilities within a company to bear on the objective of having a new development pay off rapidly and well.

A graduate of the University of Toledo, O., where he majored in chemistry and received a B.S. degree in 1934, Mr. Sveda continued his studies at the University of Illinois at Urbana, and received his Ph.D. in 1939. He joined the staff of Grasselli chemicals department of du Pont in Cleveland as a research chemist the same year. From 1945 to 1947 he was a research supervisor, and in 1948 he



HYAMINE Dairy Detergent Sanitizers

Now Officially Accepted for Hard Water Areas

The recent revision of Appendix F of the U. S. P. H. S. Milk Ordinance and Code permits the use of HYAMINE quaternary ammonium bactericides for dairy sanitation in hard water areas.

This will bring all the advantages of HYAMINE-TRITON dairy detergent sanitizers to areas with water hardnesses up to 600 ppm. Furthermore, it is expected that regional tests may validate the use of these products at even higher levels of hardness. As a result, dairy farmers and commercial

dairies in practically all regions will be able to wash and sanitize equipment and utensils in *one easy operation*.

HYAMINE-TRITON detergent sanitizers have already demonstrated outstanding cleansing and germ-killing power in New York State and many southern areas. They are safe and odorless, relatively easy to test for activity, and leave no toxic residue when used in recommended amounts. Write today for complete information.

ROHM & HAAS COMPANY
Washington Square, Phila. 5, Pa.

☐ Please send Bulletin SAN 105-1
"Detergent Sanitizers for Dairy and Food Equipment."

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HYAMINE and TRITON are trade-marks, Reg.
U.S. Pat. Off. and in principal foreign countries.

became a sales development supervisor for du Pont in Wilmington. He supervised research on silicon, which resulted in the development and marketing of "Ludox" colloidal silica, an antislip agent in floor waxes.

While experimenting with sulfamides he accidentally discovered sodium cyclohexyl sulfamate, which he synthesized in 1939 while working for his doctorate at the University of Illinois. The compound is now produced commercially by Abbott Laboratories under the trade name "Sucaryl," a non-sweetening agent which may be cooked in foods, and yet retains its full sweet flavor even in coffee, tea and other boiling solutions.

— ★ —

Fairfield Atlanta Office

Fairfield Chemical Division of Food Machinery and Chemical Corp., Baltimore, recently announced the opening of office and warehouse facilities in Atlanta, Ga. Robert B. Henderson will direct the office which will serve North Carolina, South Carolina, Georgia, Alabama, and Florida. Mr. Henderson, who holds an M.S. degree in agriculture from the University of Georgia, has worked on special technical sales and field development assignments for Fairfield in the southeastern area.

— ★ —

Puhl Builds in Ohio

John Puhl Products Co., Chicago, has started construction of a plant in Alliance, O., it was announced recently. The new plant will manufacture "Fleecy White" bleach and "Little Bo-Peep" ammonia and will distribute cleaner and lighter fluid. Scheduled for completion in November, the building will provide approximately 21,000 square feet of floor space. It is located on a nine and one half acre site.

John Puhl is a subsidiary of Sterling Drug, Inc. The Alliance facilities are the third plant built by the firm since 1952, according to Stanley H. Kord, Puhl president, who made the announcement.

Mayfield Hercules V.-Pres.

Paul Mayfield, a member of the board of Hercules Powder Co., Wilmington, Del., was elected a



Paul Mayfield

vice-president last month and a member of the executive committee. He succeeds J. B. Johnson, vice-president, who has resigned from the executive committee but who will continue as vice-president and member of the board of directors. G. Fred Hogg has been named to succeed Paul Mayfield as general manager of the naval stores department.

Mr. Mayfield joined Hercules in 1925, became manager of naval stores sales in Chicago in 1934. In 1936 he returned to Wilmington as assistant director of sales of the naval stores department and became director of sales three years later. He became assistant general manager of the department

Fred Hogg



in 1943 and general manager in 1951. In 1952 he was elected a member of the board of directors.

Newly appointed general manager of the naval stores department, Mr. Hogg joined the firm in 1929, has been associated with the department since 1930. From 1943 to 1952 he served as the department's director of sales. In 1954 he became assistant general manager.

— ★ —

Alcohol Price Rises

U. S. Industrial Chemicals Co., New York, announced an advance in industrial ethyl alcohol prices of five cents per gallon, effective July 1. All formulas of specially denatured alcohol and proprietary solvent "Solox" advanced correspondingly, dependent upon denaturants.

— ★ —

Washburn Licenses Sears

T. F. Washburn Co., Chicago, has entered into a licensing agreement with Sears, Roebuck & Co., Chicago, whereby Sears will produce jelled vehicles under patents of T. F. Washburn Co., it was announced last month.

The paint research laboratories of Sears, Roebuck & Co. have been working for some time to perfect a jelled paint that would be truly dripless, even after prolonged agitation. As a result of this research program, Sears technicians have developed a vehicle for production of jelled paints that meets this standard. The vehicle will be produced under the basic patents of T. F. Washburn Co. covering jelled vehicles. Initial production of this vehicle will begin at the Pacific Paint and Varnish Co., a Berkeley, Calif., subsidiary of Sears.

The new product is claimed to withstand repeated dipping of brush or roller applicator without losing its jelled structure. The first paint manufactured with the new vehicle and placed on the market will be a flat wall paint which will be test marketed on the West Coast this summer under the new name "Decor-Eze."



ATLAS

chem-memos

CHEMICALS DIVISION
ATLAS POWDER COMPANY, WILMINGTON 99, DELAWARE
Atlas Powder Company, Canada, Ltd., Brantford, Ontario, Canada

"Money-making tips for the
chemical specialty manufacturer"

LICENSES AVAILABLE FOR NEW IRONING AID *with big sales potential*

A new idea in home laundering aids holds promise of big payoff. It's a patented composition* which may be used in the same manner as starch or added to the last laundering rinse, to soften and lubricate the fabric during ironing. The product may be formulated either as a liquid or as a granular solid. Atlas will provide complete details, and accept applications for marketing the composition, under license.

*U.S. Patent No. 2645584.



Here's a typical formula for making the ironing aid in its liquid form:

4.5% Atlas G-1300
3.0% Sodium carboxymethylcellulose (CMC, medium viscosity)
92.5% Water

The two solid ingredients are simply dissolved in water with sufficient heat and agitation.

A typical solid granular form of the product has this formula:

5.26% Atlas G-1300
10.54% Water
3.68% Sodium carboxymethylcellulose (CMC, medium viscosity)
31.58% Tetra sodium pyrophosphate
48.94% Sodium sulfate, anhydrous

This formula is prepared by dry-mixing the salts and CMC, then incorporating the solution of G-1300 in the water into the dry mixture.

OIL-IN-WATER, WATER-IN-OIL? EMULSION-TESTER TELLS WHICH



No need to beat your brains out figuring whether an emulsion is the oil-in-water (O/W) or water-in-oil (W/O) variety. It's important to know, though, because you can dilute

or wash off O/W emulsions with water; W/O emulsions are non-washable and dispersible only in oil.

Atlas researchers use a simple testing apparatus that quickly shows whether an emulsion is W/O or O/W. It works on the principle that an O/W emulsion conducts electricity, while a W/O emulsion doesn't. The test emulsion is placed in a circuit with a lamp, which glows if the emulsion is O/W. The lamp won't glow if the emulsion is W/O, unless electrolytes such as sodium or aluminum chloride are present.

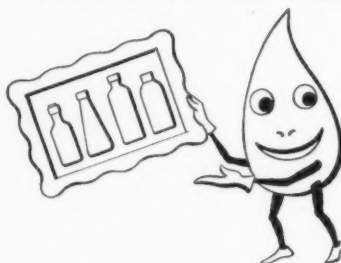
The testing device is easy to make, and we'll gladly send you a diagram and instructions for setting it up.

LOW-COST WAY TO BEEF UP CLEANING COMPOUNDS

Plenty of market opportunities for hard-working cleaning compounds these days. Set your sights on the household, dairy, or commercial markets—or all of them—put out a cleaning compound that does an exceptional job, and you're in business.

An economical way of stepping up the effectiveness of cleaning compounds is to use RENEX® non-ionic detergent concentrates made by Atlas. They add high detergency, and are widely compatible with other ingredients. RENEX is available in various types: liquid or powder,

with high or low sudsing action. Might be worthwhile to get the facts on RENEX products and give them a test run. Write for technical data and samples.



See your Atlas salesman
or call any of these
Atlas offices

NEW YORK VAnderbilt 6-1730

BOSTON KEnmore 6-7817

WILMINGTON OLympia 8-6511

ATLANTA ALpine 4338

SAN FRANCISCO
GARfield 1-8640

CHICAGO FRanklin 2-9530

HOUSTON JACkson 8-5561

ST. LOUIS JEFFerson 3-2538

CINCINNATI UNiversity 1-0244

CLEVELAND OLympic 1-6622

LOS ANGELES MIchigan 8896

Hart Now FMC President

Ernest Hart has been elected president of Food Machinery & Chemical Corp., New York, it was



Ernest Hart

announced in June. He had been executive vice-president in charge of chemical divisions. He succeeds Paul L. Davies, who becomes chairman and chief executive officer. John D. Crummey, who had served as chairman of the board of directors since his retirement from active management in 1946, has been elected honorary chairman.

Other executive advancements announced by FMC include the appointments of three new executive vice-presidents, Carl F. Prutton, former vice-president and technical director of chemical divisions, elected executive vice-president in charge of chemical divisions; James M. Hait, former vice-president, director of engineering, and manager of the Ordnance Division, elected executive vice-president; John D. Fennebresque, former vice-president and assistant to the president, elected executive vice-president. Jack M. Pope, who was administrative vice-president, becomes financial vice-president; and Alfred T. Loeffler, staff executive of the chemical divisions, also becomes a vice-president.

William Gesell Dies

William H. Gesell, 66, former vice-president of manufacturing for Lehn & Fink Products Corp., New York, died June 6 in

Mountainside Hospital, Montclair, N. J., after a long illness. Mr. Gesell held a degree in pharmacy from Columbia University and a bachelor degree in chemical engineering from the University of Michigan, which later honored him with an LL.D degree. From 1920 to 1951 he was vice-president of Lehn & Fink and at the time of his death he was a consultant to the firm and a director. Surviving are his widow, a son and a daughter.

Montrose Dividends

Montrose Chemical Corp. of California, Los Angeles, recently declared a dividend in the total amount of \$400,000 payable May 18. This together with a dividend previously paid in the current fiscal year amounts to a total of \$800,000 for the period to date. Montrose Chemical Corp. of California makes monochlorobenzene, DDT, and other products. It is jointly owned by Stauffer Chemical Co., New York, and Montrose Chemical Co. of Newark, N. J.

Eipper in New Post

E. William Eipper has been appointed director of the market development department of Stauffer Chemical Co., New York, it was announced recently by C. L. Arnold, vice-president in charge of research and development. Mr. Eipper joined Stauffer in 1954 as western manager of market development. He will continue to make his headquarters in San Francisco.

E. William Eipper



Burgess SAACI Speaker

Carter L. Burgess, assistant secretary of defense, will be the luncheon speaker at the fifth annual



Carter L. Burgess

Chemical Sales Clinic, to be held by the Salesmen's Association of the American Chemical Industry Oct. 15 at the Commodore Hotel, New York. Mr. Burgess' topic will be "Defense Needs Technicians Too." The morning of the all-day meeting will be devoted to papers on key problems in selling, such as the planning of a sales day, relationship of sales to traffic, etc. Chairman of SAACI's Sales Clinic committee is Preston F. Tinsley, Westvaco Chlor Alkali Division, Food Machinery and Chemical Corp., New York. The afternoon program will consist of three panel sessions dealing with supervision of salesmen, improvement of reseller-manufacturer relations, and the question of communications between sales and management.

Lightfoot in New Post

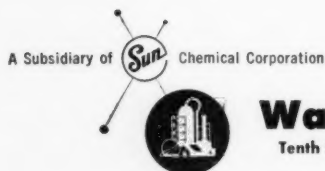
Monsanto Chemical Co., St. Louis, Mo., recently announced advancement of Charles L. Lightfoot, Jr., to manager of new products development in the development department of the research and engineering division. Mr. Lightfoot had been assistant manager of government contacts in the development department. He joined Monsanto in 1953, having previously been associated with Syntex, S. A. of Mexico.



*Superior qualities of
gloss... non-scuff... non-slip
wear and water-resistance...
leveling and stability*

Wax, and only wax, gives the outstanding characteristics demanded by the polish buying consumer. As one expert has phrased it—"you can get out of a polish only what the wax has put in." Warwick, the world's largest specialty wax refiner, offers a variety of products (oxydized waxes—Cardis One, Cardis 314, 319, 320; Cardis Polymer 8; Cane Waxes 500 and 700) and a variety of expert services (basic formulations for all types of polishes for home and industry). Warwick's stock and service centers in principal cities and custom blending of waxes and resins also provide polish manufacturers with maximum performance at no premium charge for the highest quality.

FREE SAMPLES and free testing panels are available for the asking. Write today.



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Moore Appoints Sarlin

Irving Q. Sarlin was appointed recently as president of the John B. Moore Corp., Nutley, N. J., manufacturer of solvents. He succeeds John B. Moore, founder of the company, who will become technical director and devote full time to research and new products.

New "Microsol" Unit

A new model "Microsol" dispenser for handling insecticides, deodorants and humidifiers in aerosol form and which feeds directly from a standard one-gallon rectangular can was announced in mid-June by Silver Creek Precision Corp., Silver Creek, N. Y. The "Microsol" dispensing unit is attached to the can by means of legs which fit under the handle of the can and bend down and run parallel to the side of the container. The hose from the aerosol dispenser is inserted into the can. This arrangement is said to increase the capacity of the "Microsol."

Another advantage of this type of dispensing unit is the use of the original container in which the insecticide or other material to be dispensed is packed. Thus, both the type of product, the brand name and the name of the manufacturer are always clearly visible.



Repeat "Lysol" Promotion

A sales-building free offer that is claimed to have boosted turnover in disinfectants last summer to a record high is being repeated for retailers this year by Lehn & Fink Products Corp., New York, it was announced late in June. The offer gives consumers a free "Magic Memory" shopping pad and reminder with each purchase of "Lysol" disinfectant.

Self-erasing and in handy pocket size, the pad lists 19 different shopping needs and check-boxes, with extra space for notes. A special writing stylus is included with the pad.

Kits of 25 pads, complete with a window streamer and a bright counter display with a pocket for holding the pads, are available free from Lehn & Fink or its field representatives.

Advertising mats and consumer publicity releases for placing in local newspapers are also available to promote the free offer.

Point-of-sale promotional copy for the "Magic Memory" pads stresses "Lysol's" importance as a summer household item.

According to Emanuel Goren, advertising-merchandising manager of the Lehn & Fink Division, "Summer can be an important season for disinfectant sales if the retailer takes full advantage of the promotional tools available to him. The 'Lysol Magic Memory' campaign is geared to help the merchant make the most of this season."

— ★ —

Hudson Anniversary List

H. D. Hudson Manufacturing Co., Chicago, recently published its Golden Anniversary Catalog. The 32-page illustrated brochure carries full descriptions of the firm's line of sprayers, pumps, dusters, and accessories. A separate price list supplement comes with the catalog. At the same time Hudson offers a new display stand free to purchasers of a combination package including a set number of sprayers and dusters.

Counter display-dispenser for "Magic Memory" pad promotion by Lehn & Fink Products Corp., on behalf of its "Lysol" disinfectant.



New Eastman Department

Eastman Chemical Products, Inc., New York, subsidiary of Eastman Kodak Co., recently announced establishment of a new chemical sales development section. The new unit will be separate from the commercial sales department, according to J. E. Magoffin, sales manager for the chemical division.

William M. Gearhart, formerly chief chemist in charge of the service and development laboratories of the firm at Kingsport, Tenn., is manager of the new section. R. B. Herring, who had served as assistant to Mr. Gearhart, has been advanced to fill the position as chief chemist in charge

of the laboratories, which will continue to be under Mr. Gearhart's supervision.

Under the new arrangement, all work with products being considered for the first time, and those in the development stage, will be assigned to the new chemical sales development group. Mr. Gearhart and his staff will have the responsibility for coordinating all laboratory work and industry contacts in bringing new developments to commercial status. At this point, responsibility for handling such products and establishing normal customer contact will be transferred to the commercial sales department and its field representatives.

William M. Gearhart



R. B. Herring



Insect Control Bureau

A non-profit organization aimed at educating the American public on various household insects was formed recently at Kansas City, Mo. Called the Home Insect Control Bureau, the organization will be headed by Dr. Harlan R. Shuyler, executive director. It will stress the safe and effective use of insecticides in the home in conjunction with sanitation methods.

Dr. Shuyler has been employed by, and a consultant for, several exterminating firms, Purdue University and the U. S. Fish and Wildlife Service. He is president of the Kansas Termite and Pest Control Association, a member of

the Entomological Society of America, the National Pest Control Association, and a charter member and past president of Pi Chi Omega, a professional pest control fraternity. Headquarters address of the newly-formed bureau is P. O. Box 78, Kansas City 41, Mo.

—★—

Carbide Names Murphy

E. D. Murphy has been appointed manager, sales control, for Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp., New York, according to a recent announcement by H. D. Hughes, manager, industrial chemicals. Mr. Murphy joined the company in 1925.

—★—

Adler Retires from Victor

Howard Adler, vice-president in charge of research for Victor Chemical Works, Chicago, retired June 30, it was announced by Rothe Weigel, president. Dr. Adler, 60, has elected to retire early under the firm's pension plan to devote his time to personal affairs. He has been a member of Victor's research staff for 33 years, serving many years as chief chemist in the firm's research laboratories at Chicago Heights. He holds a number of patents in detergent, dentifrice, and other industries.

New Type Dispenser

Newly designed "basin-type" dispensers were introduced last month by American Dispenser Co., New York. To save space these units are installed on the washstand itself by inserting the shank of the dispenser through a hole in the basin with the globe safely out-of-the-way under the basin. American's dispensers come with glass globes, or chromium plated metal globes at slightly higher cost. They are made with straight liquid or with lather forming soap valves. Shank lengths range from three to four and three quarter inches to fit all basins. Metal parts in contact with the soap are of stainless steel. Descriptive literature is available from the manufacturer.

For Better Insecticide Sales

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in the
CHLORDANE
picture



Chlordane is the insecticide that almost sells itself—its wide range use and acceptance represents a real sales potential for you. Whether it's mosquito abatement on 10,000 acres of marsh, ants in a kitchen, lawn that needs treatment for grubs, or turf insect control on the greens and fairways of a golf course, Chlordane fills the need.

Chlordane controls more than 45 different insects. That's why householders, municipalities, greenskeepers, and many other folks turn to Chlordane for dependable insect control. And that's why it's profitable to put yourself in the Chlordane picture.

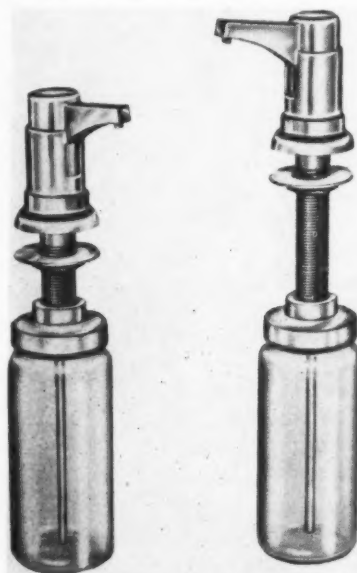
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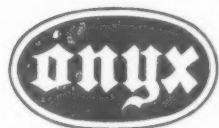
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HARD WATER
EFFICIENCY***
of New Low Priced



BTC 824

**THE SUPERIOR 'QUAT'
MEANS
MORE SALES
MORE PROFITS**



Whole new areas of sales for your sanitizing products are opened with BTC 824—the new, improved “*original quat*” (alkyl dimethyl benzyl ammonium chloride).

BTC 824 satisfies Public Health Service food and dairy sanitation requirements. Yes, even in hard water up to 600 ppm.

BTC 824 is one of the most thoroughly documented quats; BTC 824 is the leader in solubility, clarity, stability, dependability and low toxicity. BTC 824 is free of objectionable odors. *And, the new low price of BTC 824 offers you greater opportunities for increased sales and larger profits.*

The full story of what BTC 824 can do for your business is truly amazing—write or call for it today.

*... in water up to 600 ppm according to recently revised Appendix F of the U. S. P. H. S. Milk Ordinance and Code.

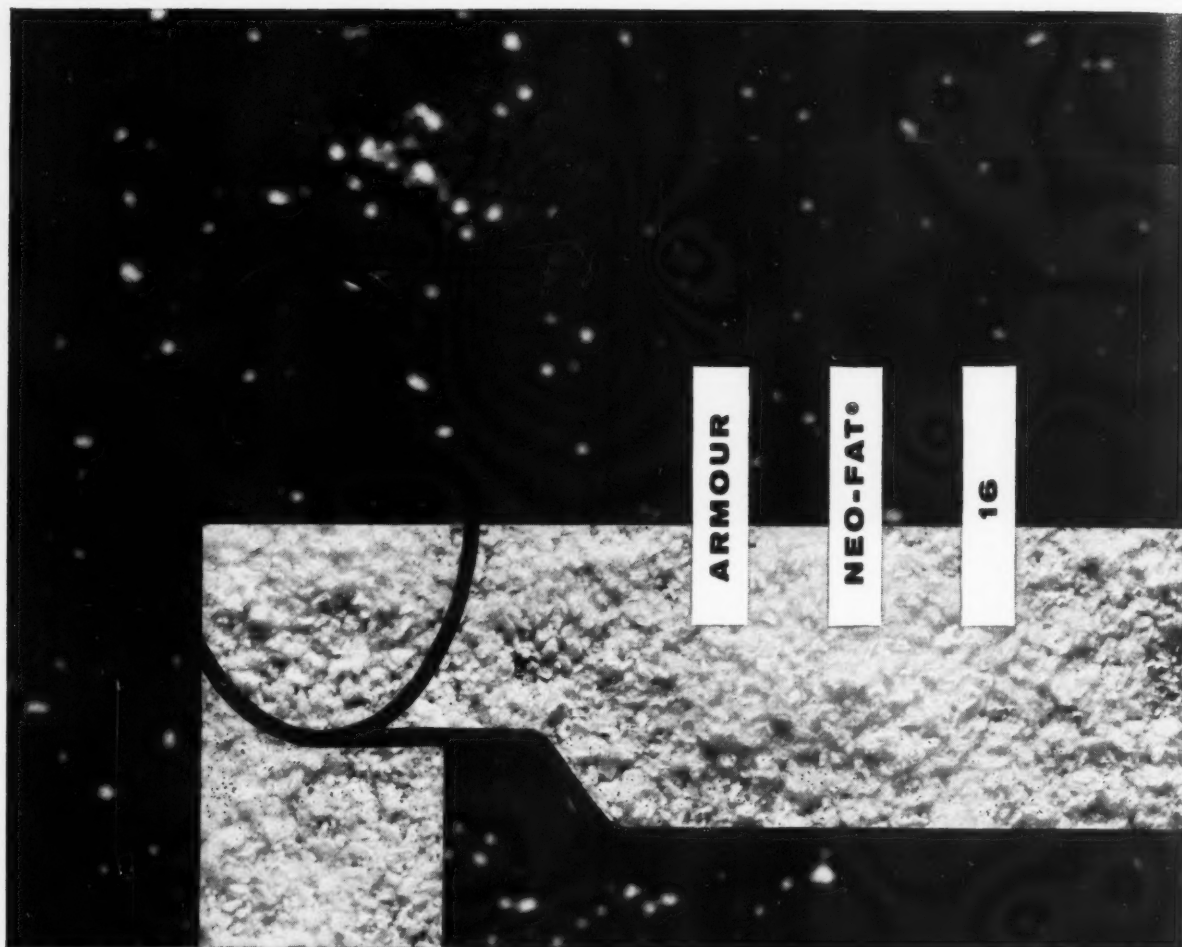
INDUSTRIAL DIVISION

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Another Armour First!

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SPECIFICATIONS	MIN.	MAX.	AVERAGE COMPOSITION	PERCENT
Titer °C.	56	59	Myristic (C-14)	1
Iodine Value.	—	1	Palmitic (C-16)	95
Acid Value.	216	220	Stearic (C-18)	Trace
Saponifiable Value. .	216	221	Oleic (C-18)	Trace
Unsaponifiable %...	—	0.3		
Moisture %	—	0.2	Animal or Vegetable Sources	
Color, 5¼" Lovibond	—	1.0R-5Y		
Heat Stability			Available in flake or powdered form.	
@ 200° C for 2 hrs. .	—	2.0R-20Y	Shipped in tank car or carload lots.	

Sells Rohm & Haas Stock

Sale by the Office of Alien Property of the Government's stock interest in Rohm & Haas Co., Philadelphia, for \$34,405,649 was approved on June 18 by Attorney General Herbert Brownell, Jr. The Office of Alien Property was directed by Mr. Brownell to accept that sum for the Government's 79,213 shares of common stock and 4,810 shares of preferred stock, representing 7.8 percent of the outstanding capital stock which was seized from German interests during World War II. About 60 percent of the remaining stock is believed to be owned by the Haas family and certain charitable institutions.

Successful bidders for these blocks of stock were Kidder, Peabody & Co. and Drexel & Co., both of New York, and a syndicate of about 75 underwriters. They offered \$428.38 a share for the common stock and \$100.33 a share for the preferred.

The transfer is said to mark the largest single sale of seized alien property ever carried out in the United States.

Johnston Research Director

Franklin Johnston has been appointed director of research for Carbide and Carbon Chemicals Co., New York, it was announced June 1 by G. H. Law, vice-president in charge of research. Dr. Johnston joined Carbide in 1933 as a research chemist. He moved up through the firm's research organization and became assistant director of research in 1951, superintendent of research in 1953.

Insect Repellent Tissues

Whitmire Research Laboratories, Inc., St. Louis, Mo., recently introduced a tissue impregnated with an insect repellent formulation said to be effective against mosquitoes, gnats, flies, chiggers, and other biting insects. Ten five-by-seven-inch tissues, packed in plastic pouch, cost 25 cents. The repellent is applied to the skin by rubbing it with

the tissue which is reusable several times.

Degree to Dr. Klarmann

Dr. E. G. Klarmann, vice president and manager of technical services for Lehn & Fink Products



Dr. E. G. Klarmann

Corp., New York, received an honorary degree of Doctor of Science from the Philadelphia College of Pharmacy and Science at the commencement exercises, June 11. The honor was bestowed on Dr. Klarmann in recognition of his work on germicides and antiseptics. The honorary degree was presented by Dr. Ivor Griffith, president of the Philadelphia College of Pharmacy and Science. The citation read in part "in recognition of his practical devotion to research in public health and human welfare."

Dr. Klarmann is a lecturer in dermatology and syphilology at the Postgraduate School of Medicine, New York University. In addition, his professional and business affiliations include: Charter member, medalist and past president of the Society of Cosmetic Chemists; current president of the Chemical Specialties Manufacturers Assn.; member of the American Chemical Society; American Institute of Chemists; American Institute of Chemical Engineers; Society of American Bacteriologists; American Association for the Advancement of Science; American Public Health Association; Society of Chemical Industry, and New York Academy of Science.

Edith Alt Resigns

The resignation of Edith Alt as Midwest sales representative was announced late in June by Cornelius Wax Refining, Dunellen, N.J. Mrs. Alt had represented Cornelius for over 12 years in ten states. She plans to spend the summer at her home in Michiana Shores, Ind., and will leave in the fall for an extended visit to Europe.

At the same time, Cornelius announced appointment of the following new sales representatives: Fred A. Jensen, 510 North Dearborn Street, Chicago 10; Harold V. Corbin, Indiana Naval Stores Co., 403 West 17th Street, Indianapolis; J. E. Niehaus & Co., 3419 Gatiot Street, St. Louis, Mo.; Skelton Chemical Co., 8747 Brandt Ave., Dearborn, Mich.; S. S. Skelton Co., 2775 Moreland Blvd., S.E., Cleveland; Paul Wiemer Co., 2089 Sherman Ave., Cincinnati; Willard N. Swanson, 1015 North 3rd Street, Minneapolis 1.

Addonizio in New Post

Appointment of James B. Addonizio as a technical sales representative in the New York office of the synthetic department of Hercules Powder Co., Wilmington, Del., was announced recently by James W. L. Monkman, the department's director of sales.

Mr. Addonizio joined Hercules in January and has undergone a sales training course at the firm's research center and home office in Wilmington.

Wood Shifts Proctor

Tom H. Proctor has been appointed general sales promotion manager of the industrial divisions of G. H. Wood & Co., Toronto, it was announced early this month by Geoffrey H. Wood, president and general manager. Prior to this advancement Mr. Proctor was sales promotion manager for Wood's general products division. In his new post he will be responsible for directing sales promotion activities of the general, cleaning and maintenance, and paper divisions.



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Diversey Boston Office

Diversey Corp., Chicago, opened a New England sales office at 101 Tremont Street, Boston 8, last month. The new office is headed by F. E. Hartig, district manager, it was announced by W. E. Noyes, vice-president in charge of sales. This is Diversey's 12th sales office. The company opened subsidiaries in Caracas, Venezuela, and in Paris, France, about six months ago.

New Floor Products

The Sanitary Maintenance Division of R. M. Hollingshead Corp., Camden, N. J., recently introduced industrial formulations of two of its floor maintenance products, "Floor Show," and "Heavy Duty Stripper."

"Floor Show" is a waxless floor polish that is claimed to offer superior self-leveling qualities which make it easier to apply. Said to have anti-skid properties, the polish contains no wax, lacquer, varnish or plastic ingredients. It resists water spotting and discoloration, according to the manufacturer.

Hollingshead claims its "Heavy Duty Stripper" will remove tough films of wax and dirt, leaving no dulling film after use. The product is designed to remove resin finishes from floors, walls and woodwork. More information on both

products may be obtained on request to R. M. Hollingshead Corp., Camden 2, N. J.

PVP Price Reduction

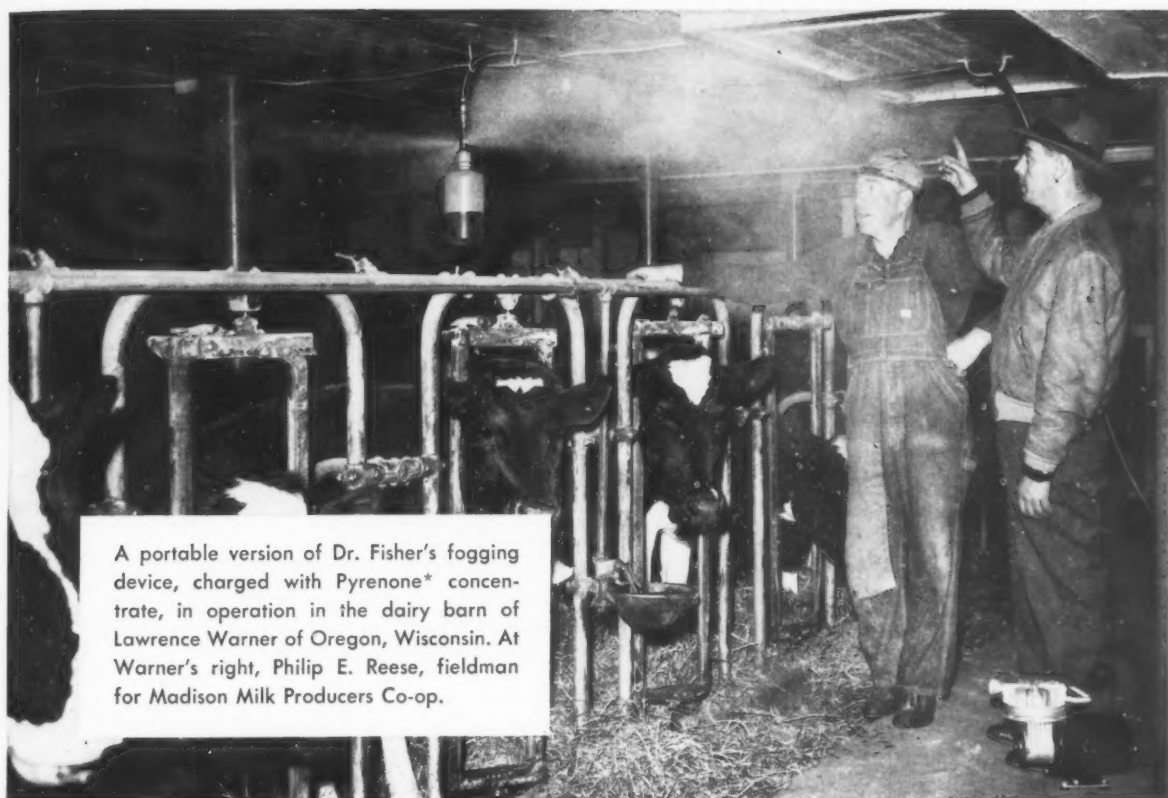
Reduced prices on its line of acetylene chemicals were announced recently by Antara Chemicals, a sales division of General Aniline & Film Corp., New York. New prices per pound in tankcar or carload quantities run as follows: propargyl alcohol—73 cents; butynediol, 35 percent aqueous solution—9 cents; butyrolactone—38 cents; 2, pyrrolidone—55 cents; vinylpyrrolidone—80 cents; polyvinylpyrrolidone — \$1.25; "Plasdone" — \$3.20; and butanediol — 28 cents. These products are now being manufactured on a commercial scale at Antara's new plant in Calvert City, Ky. Technical and other information may be obtained from Antara's acetylene chemicals department at 435 Hudson Street, New York.

M.G.K. Canadian Rep.

McLaughlin Gormley King Co., Minneapolis, appointed Allied Basic Chemical Co., Toronto and Montreal, Canada, as agent on its full line of chemicals, effective July 1. Harry Smith, president of the Canadian firm, will supervise personally the sale efforts on behalf of the MGK line, according to the announcement.



New industrial formulations for "Floor Show" and its heavy duty stripper were announced recently by R. M. Hollingshead Corp., Camden, N. J.



A portable version of Dr. Fisher's fogging device, charged with Pyrenone* concentrate, in operation in the dairy barn of Lawrence Warner of Oregon, Wisconsin. At Warner's right, Philip E. Reese, fieldman for Madison Milk Producers Co-op.

Push-Button Fly Control for Dairy Barns

LAATEST development in the growing trend to fully automatic control of livestock pests is a push-button device for fogging dairy barns and enclosed cattle pens.

At least four different types of push-button devices, both fog and mist, have been thoroughly field-tested by Dr. E. H. Fisher, Associate Professor of Entomology, University of Wisconsin. He has obtained outstanding results in

the control of biting flies in barns and on dairy animals with a *single* application!

When charged with Pyrenone sprays, push-button foggers provide quick knockdown and high kill. As Pyrenone settles in the barn and on the animals, a phenomenon known as *tactile repellency* sets up "hot-foot" resting places for newly arriving flies. Thus it tends to discourage flies from loafing in barns or on live-

stock when a herd is returned to pasture.

Net results are increased weights of beef and higher butterfat content of milk.

Pyrenone also complies with the Miller Bill under which pesticide residues in milk and meat are strictly taboo! For technical data, write Fairfield Chemical Division, Food Machinery and Chemical Corporation.

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Troyer Now Heads Tamms

Election of E. E. Troyer as president of Tamms Industries, Inc., Chicago, was announced re-



E. E. Troyer

cently. With Tamms since 1934 Mr. Troyer was named vice-president in 1944 and was advanced to executive vice-president in 1945. At the same time Tamms directors appointed Frieda Gerretson treasurer and H. P. C. W. Barber secretary.

New Knomark Plant

Knomark Mfg. Co., Brooklyn, manufacturer of "Esquire" shoe polishes, recently began construction of a new 200,000 square foot plant at Merrick Blvd. and Belknap St., Springfield Gardens, L.I., N.Y. The plant will be capable of producing one million packages of shoe polish daily when completed in 1957. Packaging operations will be completely automatic, including capping, filling, labeling and packing of products. The building will have air conditioned offices, recreation, rest, lunch and medical aid rooms. Parking will be available for 300 cars and a railroad siding will lead directly into the plant.

New Pennsalt Fluor Mine

Pennsylvania Salt Manufacturing Co., Philadelphia, recently announced completion of the Dyers' Hill fluorspar mine in Crittenden County, Kentucky. Development of this mine and expansion of milling

facilities in the same area began early in 1954. With a potential capacity substantially in excess of current requirements, the new mine supplements other mineral reserves in western Kentucky acquired by Pennsalt during the past 10 years. These resources feed the firm's expanding chlorine-fluorine facilities at nearby Calvert City. An expansion of chlor-caustic capacity and a plant for "Isotron" propellants are currently under construction.

Vestal Branch Plant

A branch manufacturing plant was opened by Vestal, Inc., St. Louis, it was announced late last month by Frank J. Pollnow, Jr., president. Located at 416 Hosmer Rd., Modesto, Calif., the plant was purchased recently from Grove Laboratories, Inc. G. Wayne Hearne, formerly in charge of engineering at Vestal's St. Louis plant, has been appointed plant manager of the Modesto operations. Located on a 9½ acre tract adjoining Tide-water Southern and Southern Pacific Railroads, the main plant is a one-story structure comprising 22,000 square feet.

The newly acquired facilities will manufacture detergents, germicides, and resinous finishes for institutional, consumer, industrial, and other uses. Re-equipping of the plant is currently in progress and the unit is scheduled to be in production by September.

CSC Advances Fischer

Commercial Solvents Corp., New York, recently announced the appointment of Hans M. F. Fischer as assistant to W. Ward Jackson, vice-president of the petrochemicals division. Mr. Fischer was formerly assistant to the general manager of the petrochemicals production department. In his new post he succeeds Thomas Potter, who has become associated with Northwest Nitro-Chemicals, Ltd., a CSC affiliated company at Medicine Hat, Alta., Canada.

Mr. Fischer has been with Commercial Solvents since 1933.

Trade Marks

(From Page 101)

squeeze bottles. Filed Aug. 3, 1955 by Chase Bottle and Supply Corp., New York. Claims use since March 10, 1955.

Jet Glaze—This for combination automobile cleaner and polish. Filed July 13, 1954 by Walter Leskowitz, doing business as Jet Products, Butler, Pa. Claims use since June 1, 1954.

Terry Tex—This for terry cloth pads impregnated with abrasive for use on pots and pans. Filed Jan. 26, 1955 by American Copper Sponge Co., Providence, R. I. Claims use since Feb. 15, 1951.

Spit-Shine—This for luster imparting liquid for use on shoes. Filed Feb. 16, 1955 by K. J. Quinn & Co., Malden, Mass. Claims use since Dec. 13, 1954.

Nu-Spra—This for composition for dressing, cleaning and treating rubber, and metal surfaces. Filed Aug. 8, 1955 by Henry V. Dum, Houston, Tex. Claims use since April 1953.

Lustrefoam—This for leather and artificial leather polishing and cleaning compound. Filed Aug. 22, 1955 by Leatherfoam, Inc., South Bend, Ind. Claims use since June 20, 1955.

Pateen—This for furniture polish. Filed Nov. 4, 1955 by Old Colony Furniture Co., Nashua, N. H.

Claims use since Oct. 24, 1955.

Shot-Gun—This for insecticidal and fungicidal garden sprays and dusts. Filed July 1, 1955 by B. G. Pratt Co., Paterson, N. J. Claims use since April 19, 1955.

Chlorea—This for herbicide. Filed July 5, 1955, by Chipman Chemical Co., Bourd Brook, N. J. Claims use since Dec. 16, 1954.

Solvem—This for paste cleaner for hands and for household. Filed Jan. 31, 1955 by Solvem Co., Portland, Ore. Claims use since Oct. 7, 1954.

Kliff—This for solvents to remove stains from textiles. Filed March 29, 1955 by George D. Butcher, doing business as Fort Worth Si-Clean Service, Fort Worth, Texas. Claims use since July 1, 1952.

C. W. C.—This for floor cleaners. Filed June 27, 1955 by Columbia Wax Co., Glendale, Calif. Claims use since April 17, 1950.

Dostgone—This for sweeping compounds. Filed July 5, 1955 by Sanitary Soap Co., Paterson, N. J. Claims use since July 1936.

Evil Angel—This for soap. Filed July 11, 1955 by Nettie Rosenstein, Inc., New York. Claims use since May 5, 1955.

Minit Wash!—This for powdered product to clean motor vehicle bodies. Filed Aug. 12, 1955 by Continental Midway Corp., Baltimore. Claims use since July 6, 1954.

Shux—This for toilet, laundry and industrial cleaners in liquid, solid, paste and powder form. Filed Aug. 16, 1955 by Producers Chem-

ical Service, Borger, Tex. Claims use since July 18, 1955.

Soilite—This for detergent for dishwashing machines. Filed Aug. 25, 1955 by Economics Laboratory, Inc., St. Paul, Minn. Claims use since May 1, 1955.

— * —

Non-Wax Floor Polish

Columbia Wax Co., Glendale, Calif., has developed a new non-wax emulsion type floor polish called "SafeGuard," it was announced recently by C. H. Richardson, director of marketing. The polish was developed to minimize the danger of falls on polished floors, according to the manufacturer.

"SafeGuard" is said to be self-leveling, quick drying and resistant to rubber heel marking. It requires no polishing at the time of application, but may be polished after heavy traffic use to restore its original appearance. The new polish may be wet-mopped to remove surface soil. More detailed data on "SafeGuard" may be obtained on request to Columbia Wax Co., 530 Riverside Drive, Glendale 4, Calif.

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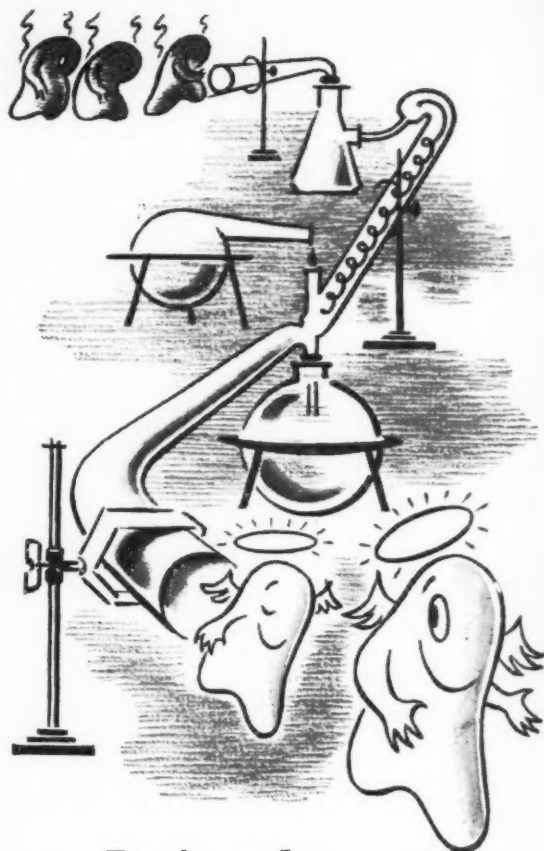
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- better shelf life

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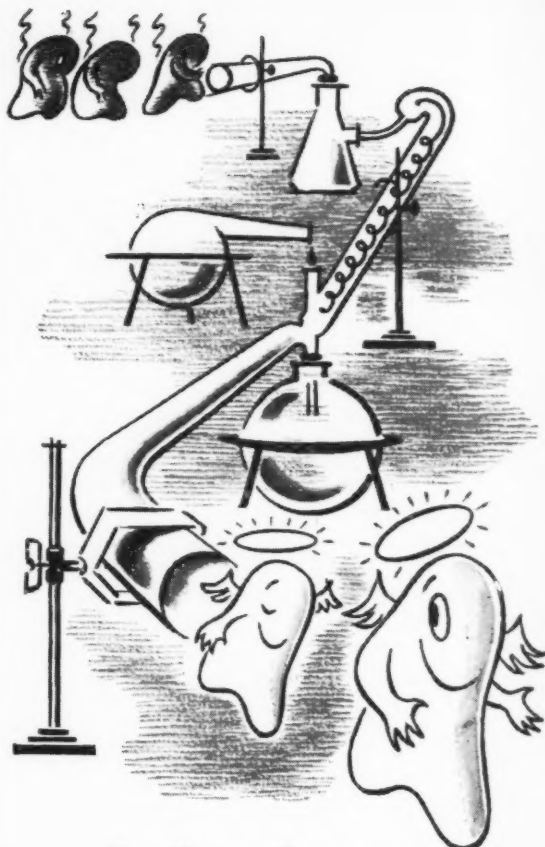
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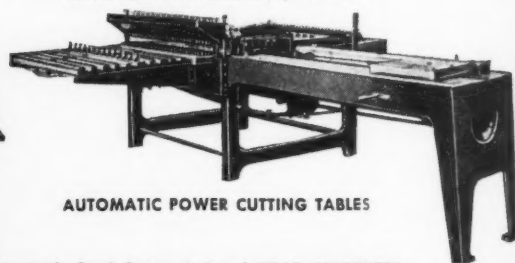
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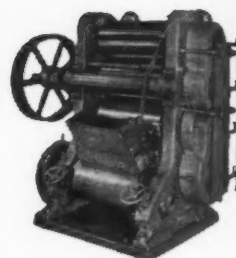


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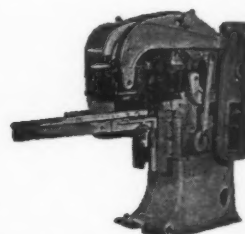


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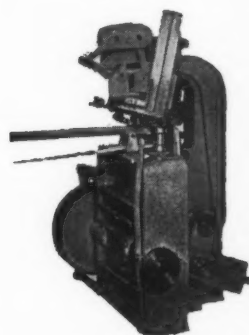
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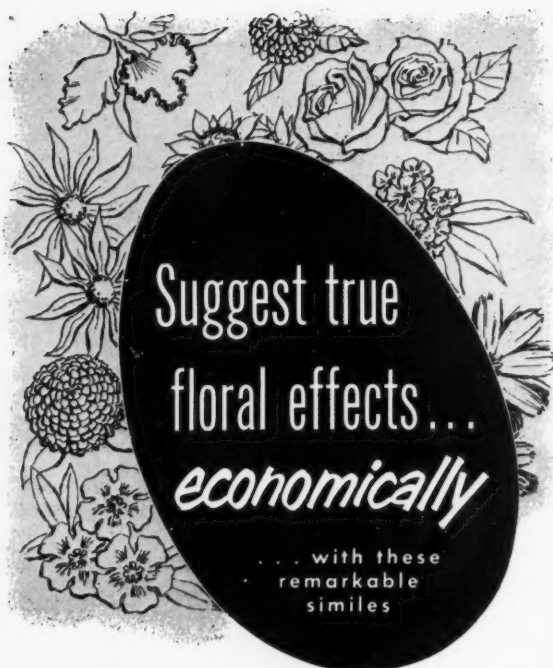
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(Continued on Page 173)



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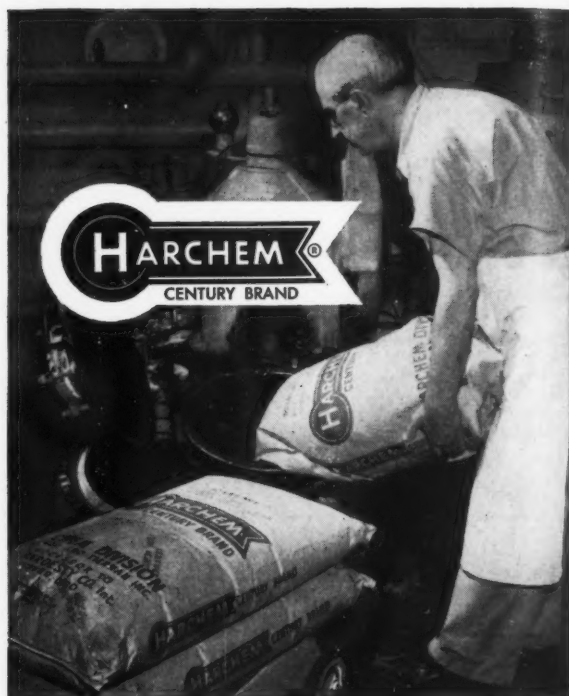
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(Reference Books see page 178)

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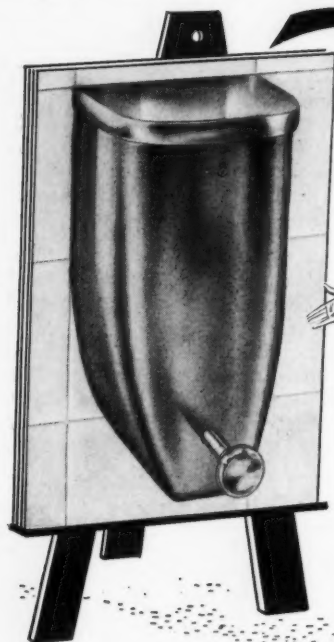
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Dow Moves in New Orleans

Dow Chemical Co., Midland, Mich., moved its New Orleans sales office to larger quarters at 305 Maritime Building, it was announced late in June by Donald Williams, vice-president and director of sales. The office, previously located at 925 Common Street, is under the supervision of Robert J. Minbiole, manager.

Pressure Packaging

(From Page 143)

Thirty-nine terms are defined . . . 13 others are suggested for definition in the glossary. While those numbers don't sound particularly impressive when you compare them with the number of entries in a dictionary, the task was a tough one considering how hard it is to obtain unanimous approval of such a project by an association committee.

Only comment we have is that "aerosol products" still is defined narrowly as one using a lique-

fied gas propellant. That excludes whipped creams and soft drink concentrates as now packaged in pressurized containers . . . excludes, too, the whole range of new applications envisioned in Connecticut Chemical Research Corporation's recent "Polysol" disclosures.

* * *

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Pyrethrum Synergist

(From Page 135)

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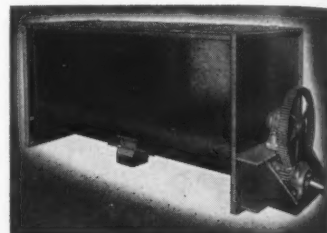
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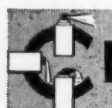
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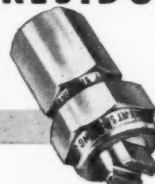
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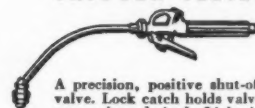
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Bacteriostatic Oils

(From Page 75)

found high against gram-negative organisms but very low against gram-positive bacteria. Activity against acid-fast organisms was practically nil. Germicidal efficiency of lemongrass oil emulsions appears to be directly proportional to the citral content. Emulsification properties of the oil and efficiency of the emulsifier were the other important factors affecting bactericidal activity. Best emulsifiers are triethanolamine or potassium oleates and rosin soap. Particle size and germicidal potency were found to be correlated. A higher than optimum concentration of emulsifier lowered bactericidal activity of the emulsion, as did the solvent used

to make disinfectant solutions of the oil.

Important constituents of Indian essential oils were isolated and examined for Rideal-Walker coefficients. When the relationship between antibacterial activity and chemical constitution was studied the CHO group was found to be more active than the -OH group. The presence of the double bond in terpene aldehydes and alcohols was found to enhance the efficiency of the active group.

Lemongrass oil is susceptible to autoxidation during storage and consequent loss of citral content and germicidal properties. Disinfectant preparations formulated from the oil were shown to lose bactericidal efficiency on keeping. Addition of certain antioxidants retards deterioration of the oil but does not prevent loss of antibacterial activity in the disinfectant preparation. Abstract of a paper presented by V. Subrahmanyam and S. M. Bose (Department of Bio-

chemistry, Indian Institute of Science, Bangalore) at the first symposium on research and development in Indian essential oils and aromatic chemicals, held under the joint auspices of the Forest Research Institute and the Council of Scientific and Industrial Research at Dehra Dun, Oct. 6-9, 1955.

Methylene Chloride

(From Page 151)

today. The properties of these propellants can be readily estimated by interpolation of the data presented in this paper.

Acknowledgements

THE authors express their appreciation to Dr. Winston H. Reed of the Aerosol Process Company, Bridgeport, Connecticut, and John P. Sheehy of the Solvay Process Division for reviewing this manuscript and for extending a number of valuable suggestions during its preparation.

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Coming Meetings

American Oil Chemists' Society, 47th annual fall meeting, Chicago, Sept. 24-26, 1956.

American Public Health Association, 84th annual meeting, Convention Hall, Atlantic City, Nov. 12-16.

American Society for Testing Materials, Committee D-21 on Wax Polishes and Related Materials, Washington, D. C., Dec. 10.

Chemical Specialties Manufacturers Association, 43rd annual meeting, Mayflower Hotel, Washington, D. C., Dec. 3-5.

Drug, Chemical and Allied Trades Section of the New York Board of Trade, annual outing, Pocono Manor Inn, Pocono Manor, Pa., Sept. 27-29.

Entomological Society of America, annual meeting, Dec. 27-31, 1956, Hotel New Yorker, New York City.

International Sanitation Maintenance Show and Conference, New York Coliseum, Oct. 14-16.

National Association of Sanitarians, 20th annual conference and exposition, Morrison Hotel, Chicago, July 23-26.

National Motel Show, 3rd annual convention, at Morrison Hotel, Chicago, Oct. 29-31.

National Hotel Exposition, 41st annual show, Coliseum, New York City, Nov. 12-16.

National Packaging Exposition and Conference, International Amphitheatre, Chicago, April 8-11, 1957.

National Pest Control Association, 23rd annual convention, Sheraton Cadillac Hotel, Detroit, Oct. 22-25.

National Sanitary Supply Association, eastern regional meeting, Park Sheraton Hotel, New York, Oct. 11-12; southwestern regional meeting, Hilton Statler Hotel, Dallas, Sept. 7-8; first western regional trade show and convention, Ambassador Hotel, Los Angeles, Nov. 25-29. Annual convention and trade show, Conrad Hilton Hotel, Chicago, March 31, April 1, 2-3, 1957.

Packaging Machinery & Materials Exposition, Public Auditorium, Cleveland, Sept. 11-14.

Society of Cosmetic Chemists, seminar, Barbizon Plaza Hotel, New York, Oct. 4-5.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, Sept. 11, Oct. 9, Nov. 7; annual meeting and dinner, Biltmore Hotel, New York, Dec. 3.

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Tale Ends

SUDS, suds and more suds merrily billowing forth from the fountain topped off by the statue of Prometheus in the heart of New York's Radio City. The phenomenon, probably caused by some heat stricken joker who dumped a quantity of detergent into the fountain, was not an isolated one. The same thing happened in Boston about a week earlier. All of which recalls the time a similar incident took place in the public fountains in Cincinnati a few springs back when the CSMA was meeting there.

* * * *

Liquid detergents are really going to town! Lever Brothers, whose liquid "Lux" is making a big hit with the housewife, has taken down a spray drying tower at its big Hammond, Ind., plant to make room for still another liquid detergent filling line.

* * * *

You can't please everybody. That's what Postmaster W. B. Hudson of Dallas, Tex., found out recently when his plan to treat letter carriers' uniforms with a chemical dog repellent was objected to. Postmaster Hudson, because he was receiving about 20 to 25 complaints a month from postmen who had been attacked or threatened by vicious dogs, planned to have his men's uniforms treated with dog repellent. But there were objections. From the dogs? Not at all, dear reader, but from the letter carriers. Some of them happen to be dog lovers and don't want to repel the pooches they meet on their daily rounds. Might hurt the poor pups' feelings.

* * * *

Sling shots as a weapon in the never ending war against mosquitoes? Could be. The city-county health department of Wilmington, N. C., is considering the idea in its feud with the salt-marsh mosquito. Only these sling shots are really loaded. They fire a capsule type "bomb" which when dissolved in water releases DDT emulsified in oil, which has proved effective in destroying mosquito wrigglers. The capsule can be dropped into otherwise inaccessible ponds by lobbing them over the underbrush with sling shots, so says Dr. C. B. Davis, county health officer.

* * * *

It was bound to happen. To square the score in a minor family row a Memphis housewife lathered the top of her husband's chocolate pudding with aerosol shave cream instead of using the more conventional pressure packed whipped cream. Trusting hubby, not paying too much attention to what was happening, picked up his spoon and finished off his dessert without comment.

* * * *

Attractive Marcella Schneider of the staff of the Soap Association turns

out to be so photogenic in a picture accompanying a feature article on the Soap Association in a recent issue of the NEW YORK WORLD-TELEGRAM that she has been literally besieged with movie offers. In the story on the 30th anniversary of the Soap Association, Ruth Goldberg, star public relations gal of the association, revealed this little known tidbit. Certain unnamed companies, according to records of the Soap Association, pay a 25 cent bonus to employees who take a bath. As Ruth points out, figured on a five day week, this is \$1.25 extra just for being clean. Now that is a custom that all warm-weather subway riders ardently hope will spread like wildfire.

* * * *

What will they think of next? Not to be outdone by a Swedish toothpaste that comes in a "talking" package, the color starved British now have a sky blue toothpaste. Not only that but the stuff actually has the flavor of chewing gum. Blue for whiter teeth is the slogan of this newest British brain child, which is sympto-

matic of the trend to color in everything turned out in the British Isles. The war-induced shortage of color has left its mark on all sorts of British goods from scrubbing brushes to refrigerators and sinks, all of which now come in a wide range of hues.

* * * *

The last word in luxury in air travel is Continental Can Company's converted B-24 "Liberator" bomber, which now shuttles the can company's executives and guests around the country. The interior of the plane, which was recently put into service after complete remodelling, resembles the drawing room of a fashionable home. Capable of carrying 12 passengers and a crew of three comfortably, and we do mean comfortably, the plane is equipped with an arm chair control radio-console. The plane is one of four owned and operated by Continental. Recently, for the opening of the company's new research laboratories in Chicago, the plane left New York in the morning, flew several trade magazine editors to Chicago for a tour and lunch at the research center, and returned them to New York early the same evening. For one of the editors this round-trip was only his second time in the air.

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